BUILDING: 1100 Milam Building
Houston, Texas

The following bulk samples from the above-referenced building were analyzed and were used to supplement the opinion regarding the manufacturer and product.

Bulk Sample	Sample Location	Collected By
4	L-34E Electrical Room	McCrone
1B	4th Floor	LAI
2B	14th Floor	LAI
3B	20th Floor	LAI
4B	30th Floor	LAI
5B	33rd Floor	LAI
6B	41st Floor	LAI
7B	40th Floor	LAI
8B	26th Floor	LAI
9B	12th Floor	LAI
10B	10th Floor	LAI
11B	8th Floor	LAI
1A	26th Floor	DEI
1A	16th Floor	DEI
2A	16th Floor	DEI
16A	16th Level, Low Rise Elevator Shaft	DEI
16B	16th Level, Low Rise Elevator Shaft	DEI
5	5th Level, Low Rise Elevator Shaft	DEI

Bulk Sample	Sample Location	Collected By
10	10th Level, Low Rise Elevator Shaft	DEI
1B	39th Floor	DEI
1C	25th Floor	DEI
1C	40th Floor	DEI

MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M1647-4 Date: 3/26/91

Project Name: PRUDENTIAL ; 1100 MILAM BLDG. 10C48 Analyst: W. B. Eyler

Sample Identification: MB-4 L-34 E ELECT RM.

Gross Visual Description: LIGHT BEIGE GOLD FLAKES AND BOARD AS WELL AS FIBERS THROUGHOUT A FINE MATRIX. WHITE PAINT ATTACHED.

Optical Data for Asbestos Identification

Morphology	WAVEY			
Pleochroism	NONE			
Refractive Index	(1.611) 1.54/1.55			
Sign of Elongation	+			
Extinction	parallel			
Birefringence	LOW			
Melt	NO			
Fiber Name	CHRYSOTILE			

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	53

ABUNDANT GYPSUM WITH FINE GRANULAR MINERALS SCATTERED THROUGHOUT.

EFFERVESCENCE: WEAK IN ISOLATED AREAS

COMMENTS:
NO STARCH OBSERVED.

MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-1 Date: 01/5/90

Project Name: 1100 Miami Analyst: Carlson

Sample Identification: 1B 4TH FLOOR

Gross Visual Description: tan matrix w/ gold fibers + wavy fibers, wht color one side

Optical Data for Asbestos Identification

Morphology	wavy			
Pleochroism	no			
Refractive Index	1.54 1.55			
Sign of Elongation	+			
Extinction	0			
Birefringence	low			
Melt				
Fiber Name	Chr			

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	53

abundant gypsum

EFFERVESCENCE: non-detected

COMMENTS:

450

PIS 00111202

MATERIALS ANALYTICAL SERVICES, INC.
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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL : 1100 MLAM 120.48
SAMPLE NUMBER: M3177-1
SAMPLE ID: #1B 4TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W B. Eyeland

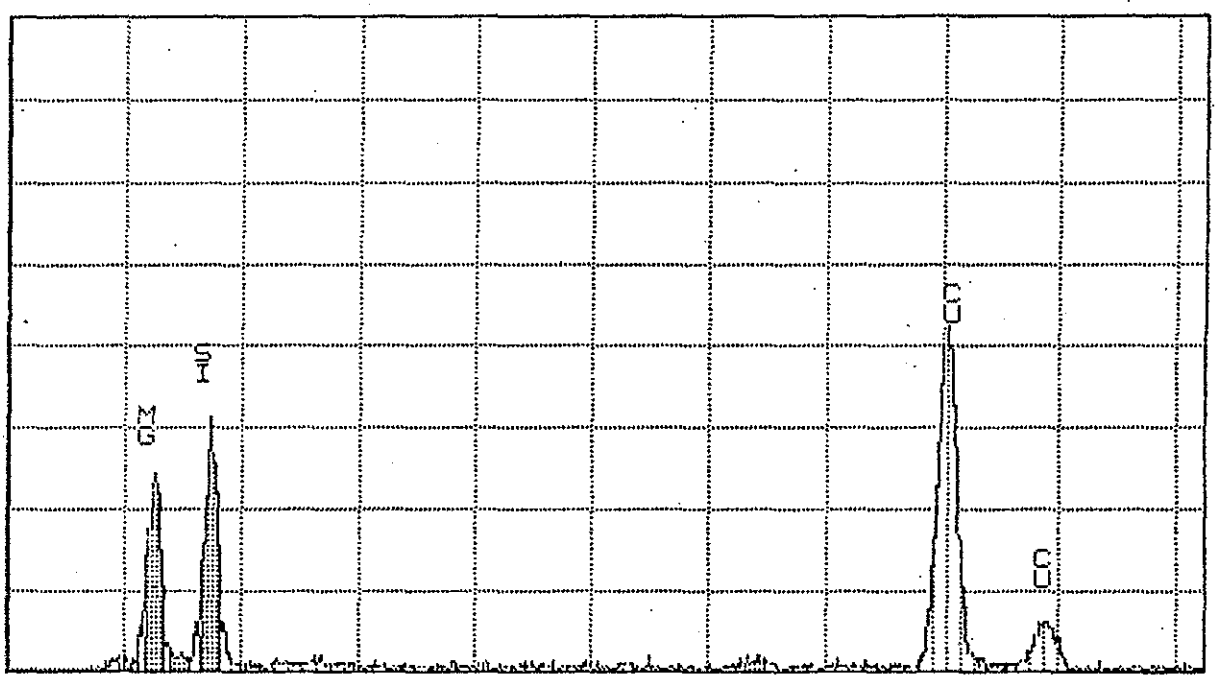
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: GYPSUM (EDS)(DIFF)
VERMICULITE (EDS)

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 09:45

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1045

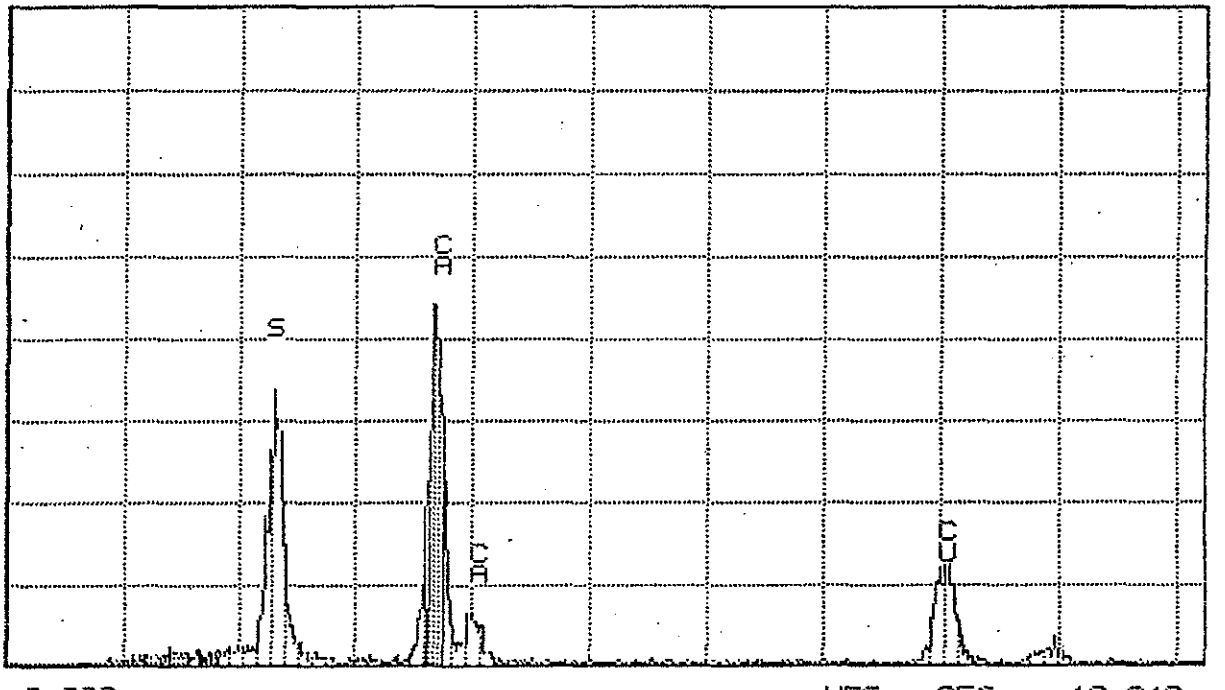


0.000 VFS = 256 10.240

9 M3177-1, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 09:47

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=65

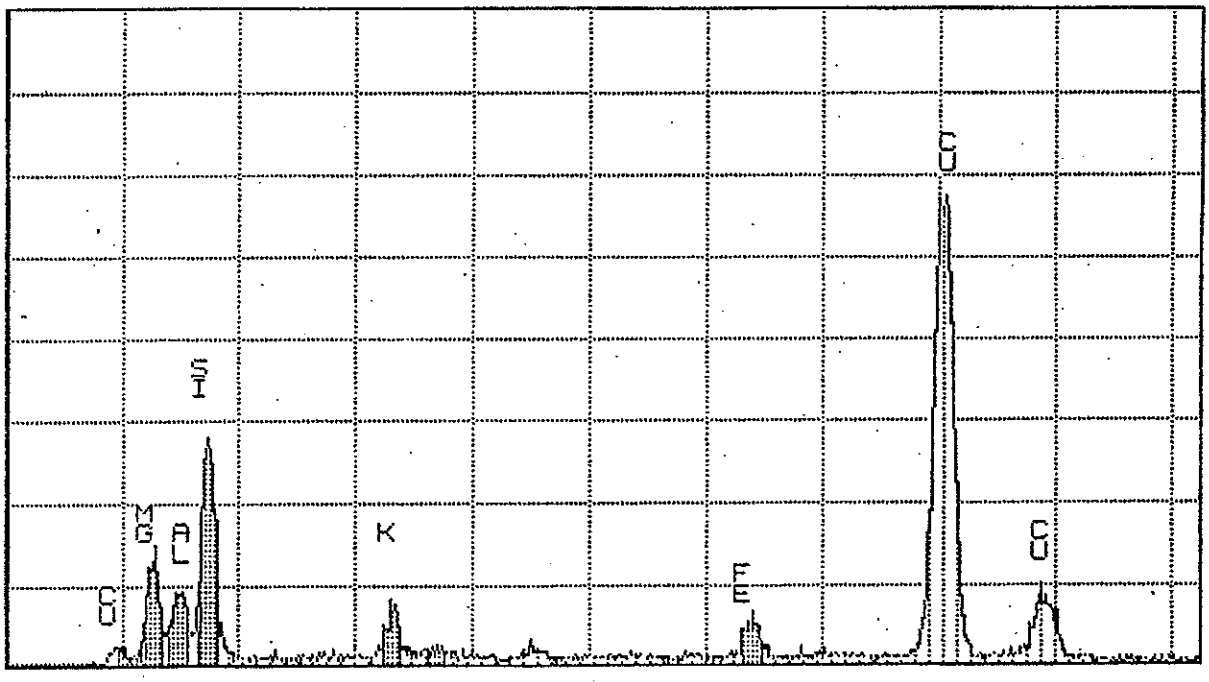


0.000 VFS = 256 10.240

6 M3177-1, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 09:49

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=1040



0.000 VFS = 256 10.240

16 M3177-1, VERMICULITE

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # A13177-1 Analyst J.K.R.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.9885	g
(2) Petri dish minus sample:	8.1864	g
(3) Original sample weight:	0.8021	g
(4) Filter weight:	0.0588	g
(5) Clean petri dish weight:	7.3672	g
(6) Final sample weight plus filter and petri dish:	7.7781	g
(7) Final sample wt:((6) -[(4) + (5)])	0.3521	g
(8) Percent residue wt:((7)/(3) x 100)	43.9	%
(9) Amount in solution:(100 - (8))	56.1	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # 13177-1 Analyst W. D. Eyland

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed (no) ✓

yes _____

Iodine test (ceiling tile only) positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-2 Date: 7/5/00

Project Name: 1100 Main Analyst: Henderson

Sample Identification: 2B 14TH FLOOR

Gross Visual Description: tan matrix, rust color one side, white fibers, gold flakes

Optical Data for Asbestos Identification

Morphology	wavy
Pleochroism	no
Refractive Index	1.54/1.55
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	
Fiber Name	chry

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	10
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	55

abundant gypsum.

EFFERVESCENCE: non-detected

COMMENTS: NSD

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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL - 1100 MILAN : 120.48
SAMPLE NUMBER: M3177-2
SAMPLE ID: #2B 14TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W. B. Eyl

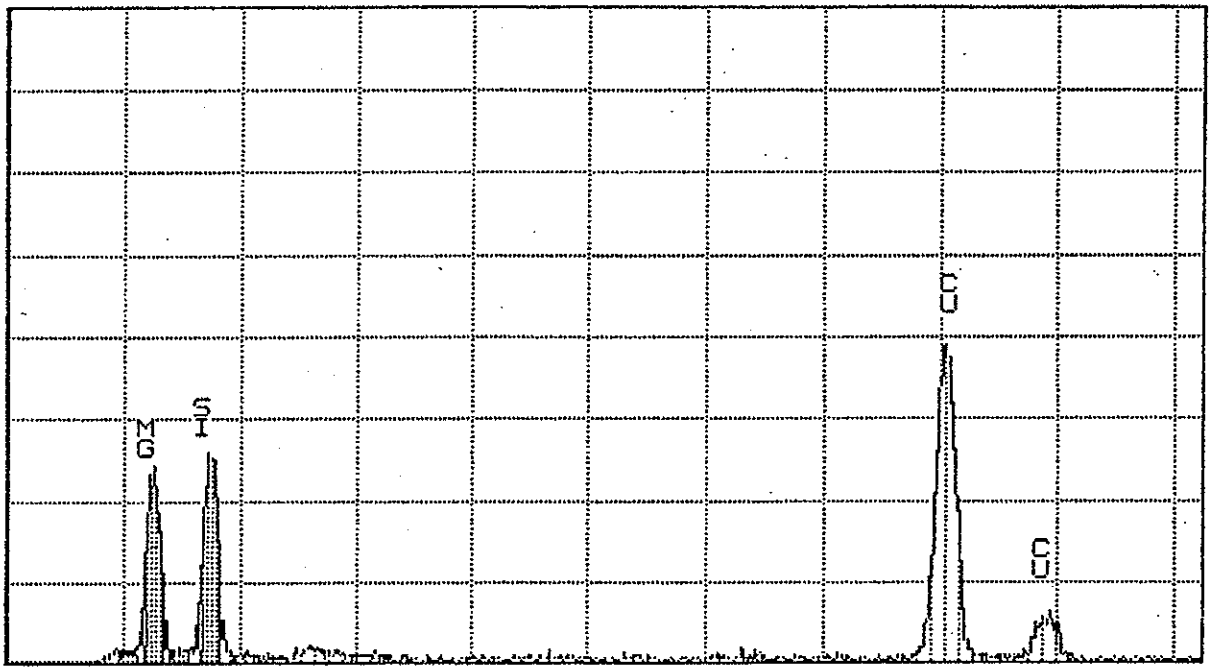
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
IRON PARTICLE (EDS) TRACE AMOUNT

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:21

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1001

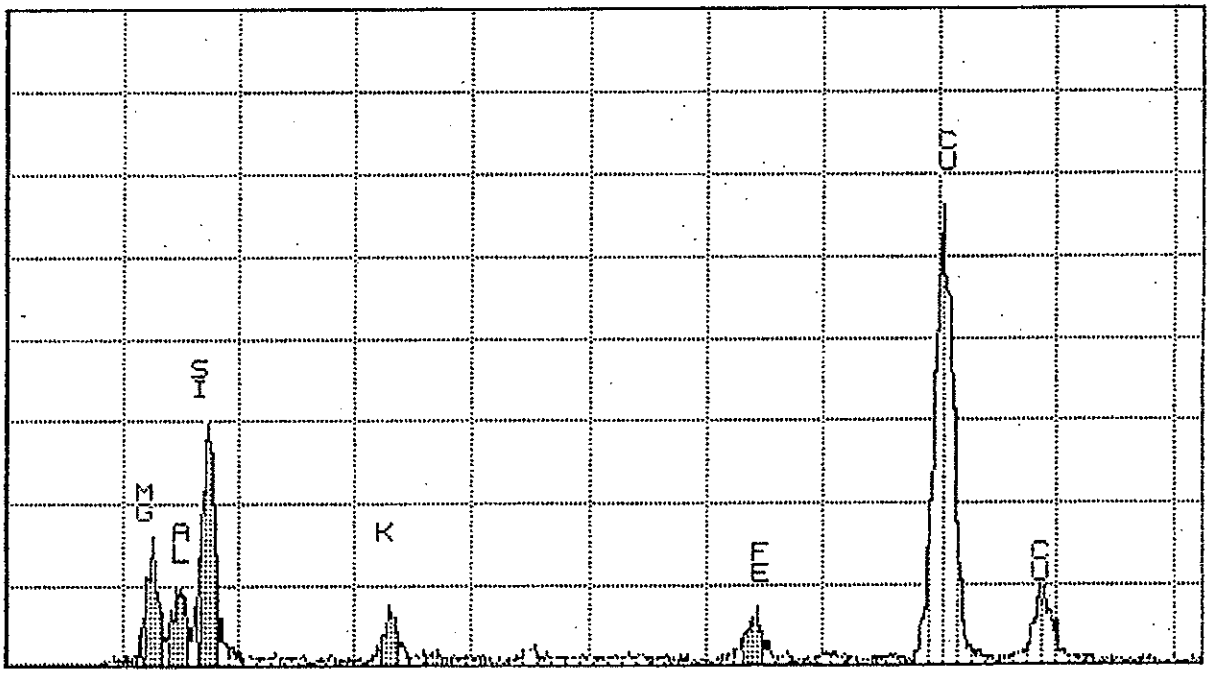


0.000 VFS = 256 10.240

49 M3177-2, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:17

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=1035

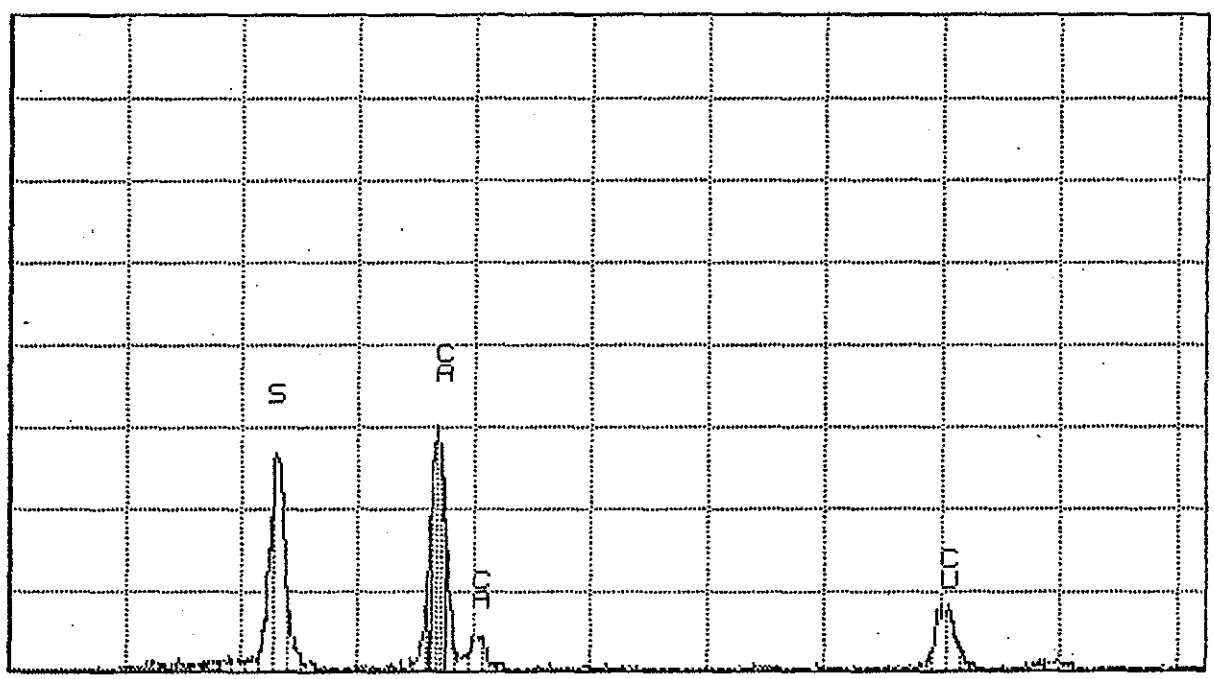


0.000 VFS = 256 10.240

10 M3177-2, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:23

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=55

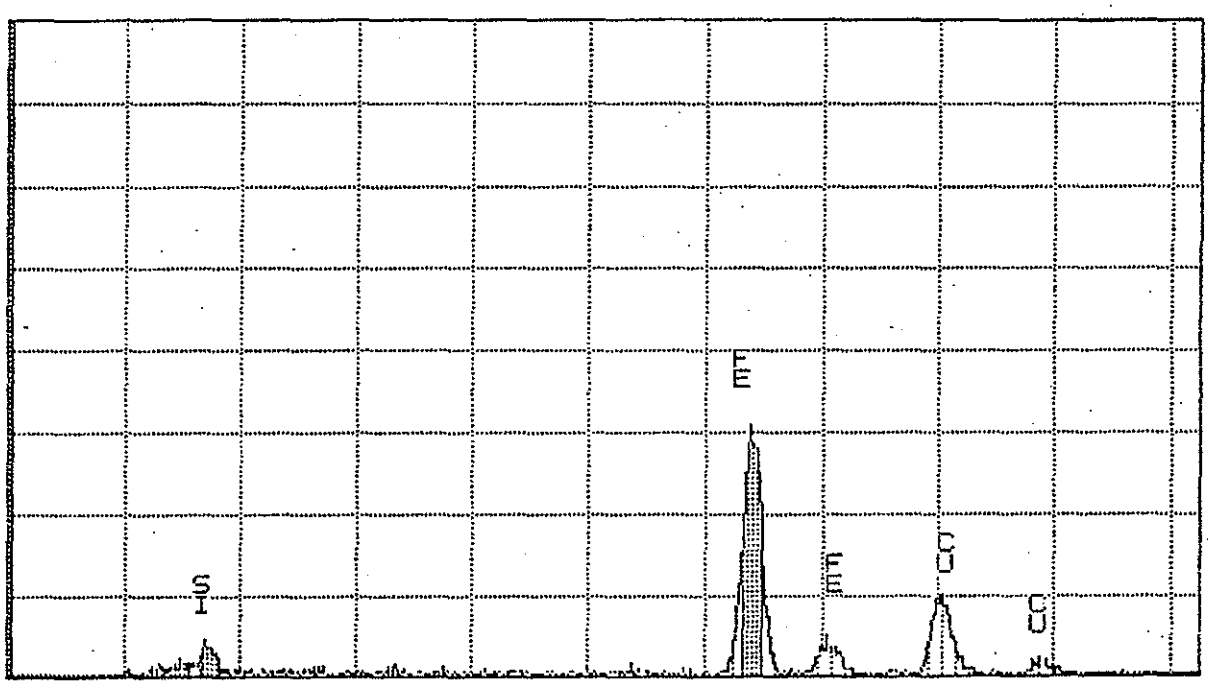


0.000 VFS = 256 10.240

4 M3177-2, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:31

Cursor: 0.020keV = 0 ROI (SIKα) 1.660: 1.810=156



0.000 VFS = 256 10.240

7 M3177-2, IRON PARTICLE

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-2 Analyst J. K. L.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.5863	g
(2) Petri dish minus sample:	7.7598	g
(3) Original sample weight:	0.8265	g
(4) Filter weight:	0.0591	g
(5) Clean petri dish weight:	7.3954	g
(6) Final sample weight plus filter and petri dish:	7.8256	g
(7) Final sample wt:((6) -[(4) + (5)])	0.3711	g
(8) Percent residue wt:((7)/(3) x 100)	44.9	%
(9) Amount in solution:(100 - (8))	55.1	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # M3177-2 Analyst W. B. Eyl

Date 8/9/96

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-3 Date: 7/5/90

Project Name: 1100 Milam Analyst: Hendrix

Sample Identification: 3B 20TH FLOOR.

Gross Visual Description: tan matrix, rust colored one side, gold flakes + wavy fibers

Optical Data for Asbestos Identification

Morphology	wavy		
Pleochroism	no		
Refractive Index			
Sign of Elongation	+		
Extinction	∥		
Birefringence	low		
Melt			
Fiber Name	chry		

ASBESTOS MINERALS: **Est. Vol. %**

Chrysotile	11
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	54

abundant gypsum

EFFERVESCENCE: v. weak

COMMENTS: ND

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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL : 1100 MICAM : 120.48
SAMPLE NUMBER: M3177-3
SAMPLE ID: #3B 20TH FLOOR.

DATE OF ANALYSIS: 8/6/90

ANALYST: W. B. Egeland

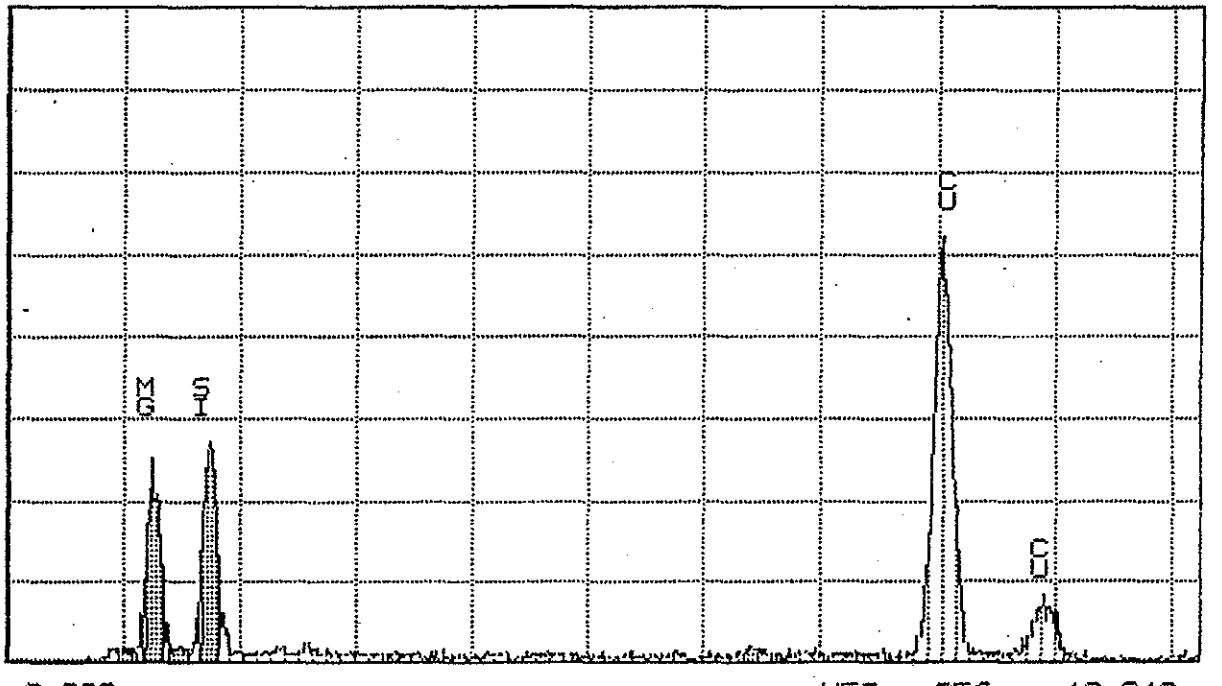
Asbestos Minerals: CHRYSOTICE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
CALCITE (EDS)(DIFF) *TRACE AMOUNT

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:42

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1021

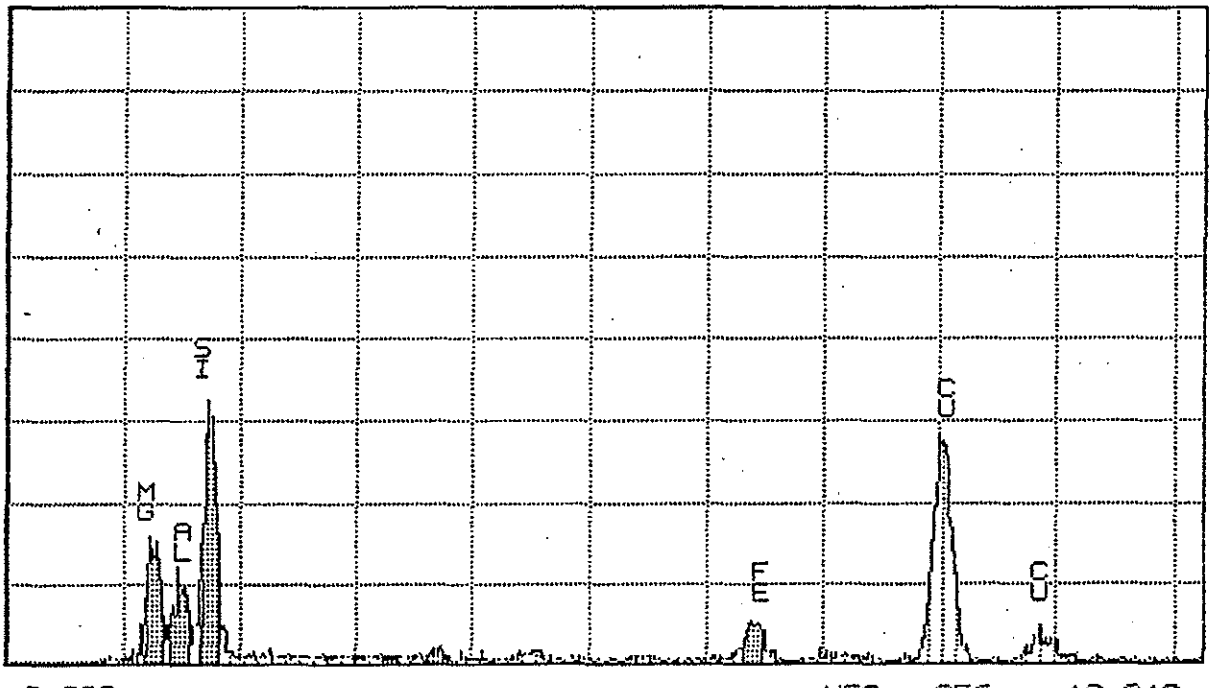


0.000 VFS = 256 10.240

14 M3177-3, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:41

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1123

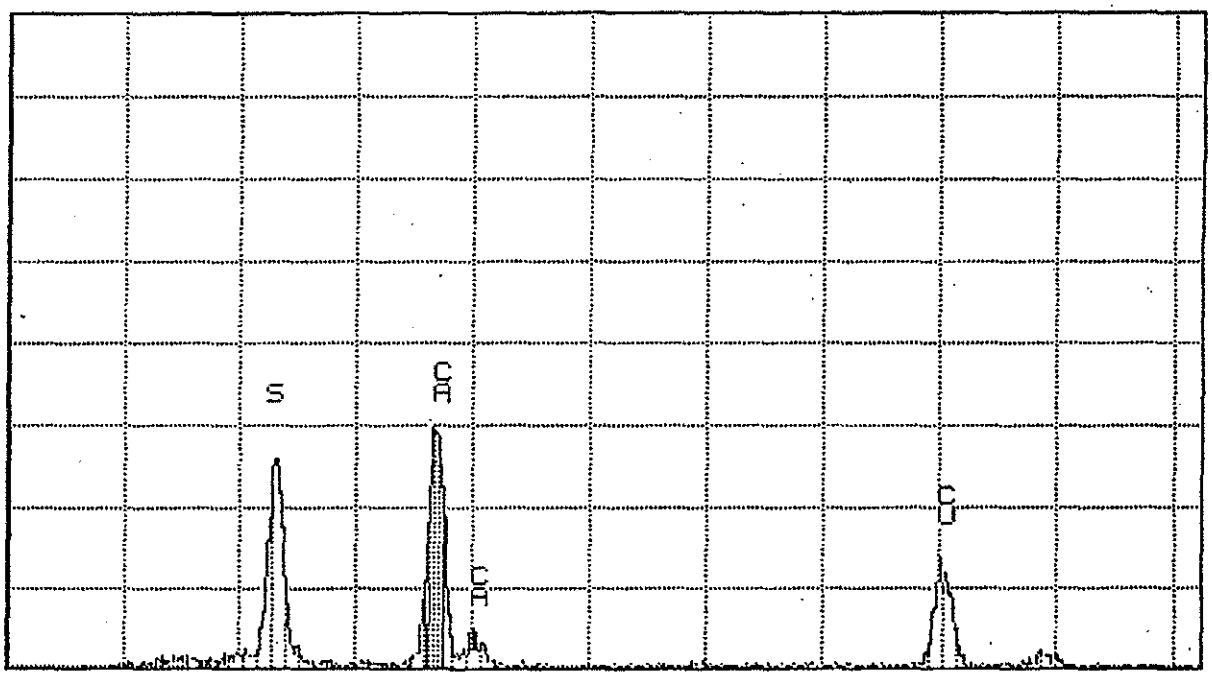


0.000 VFS = 256 10.240

7 M3177-3, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:44

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=49

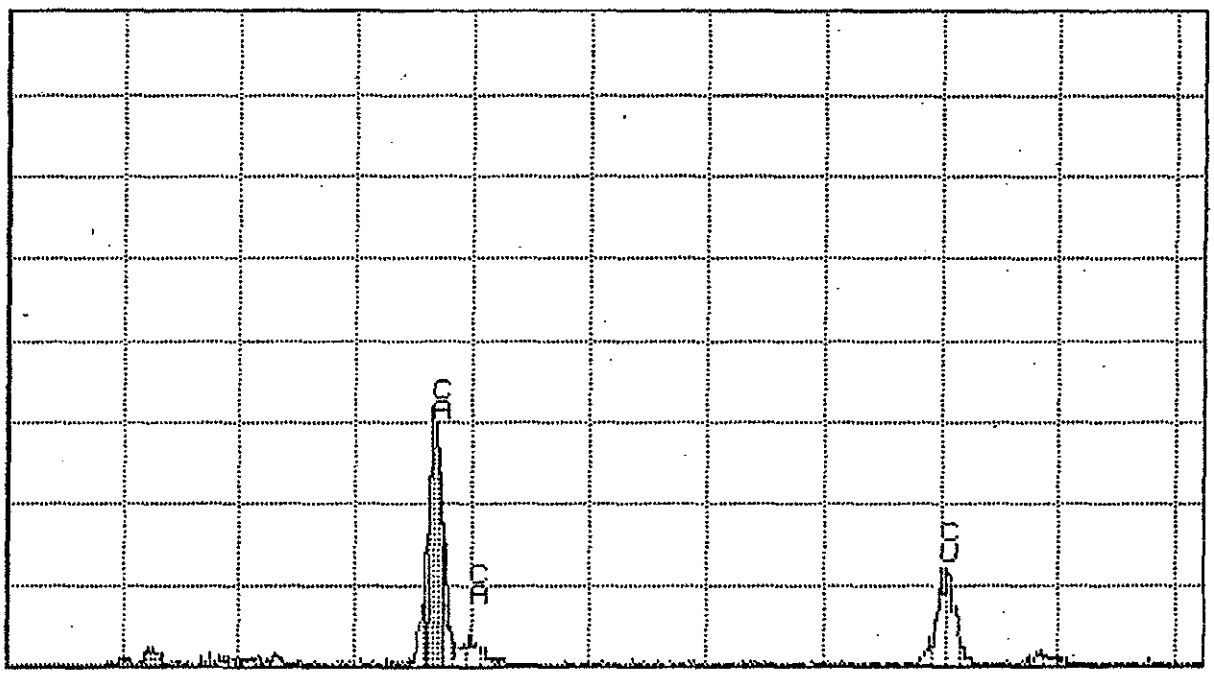


0.000 VFS = 256 10.240

7 M3177-3, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 10:45

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=38



0.000 VFS = 256 10.240

11 M3177-3, CALCITE

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-3 Analyst S.K.P.

Date 08/07/90

ACID DISSOLUTION

(1)	Petri dish plus sample:	9.2272 g
(2)	Petri dish minus sample:	8.1277 g
(3)	Original sample weight:	1.0995 g
(4)	Filter weight:	0.0594 g
(5)	Clean petri dish weight:	7.3596 g
(6)	Final sample weight plus filter and petri dish:	7.8791 g
(7)	Final sample wt:((6) -[(4) + (5)])	0.4551 g
(8)	Percent residue wt:((7)/(3) x 100)	41.4 %
(9)	Amount in solution:(100 - (8))	58.6 %

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # 43177-3 Analyst W.B. Eglund

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M 377-4 Date: 7/5/90

Project Name: 1100 Main Analyst: Anderson

Sample Identification: 4B 30TH FLOOR.

Gross Visual Description: tan matrix, paint coating one side, rust color other side, wavy fibers & gold flakes

Optical Data for Asbestos Identification

Morphology	WAVY		
Pleochroism	no		
Refractive Index	INTERMED.		
Sign of Elongation	+		
Extinction	O		
Birefringence	low		
Melt			
Fiber Name	Chry.		

ASBESTOS MINERALS: **Est. Vol. %**

Chrysotile	10
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	55

abundant gypsum, scattered carbonates

EFFERVESCENCE: v. weak, stronger near paint.

COMMENTS: 2BD

MATERIALS ANALYTICAL SERVICES, INC.
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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL: 1100 MILAM: 120.48
SAMPLE NUMBER: M3177-4
SAMPLE ID: #4B 30TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W. B. Eyche

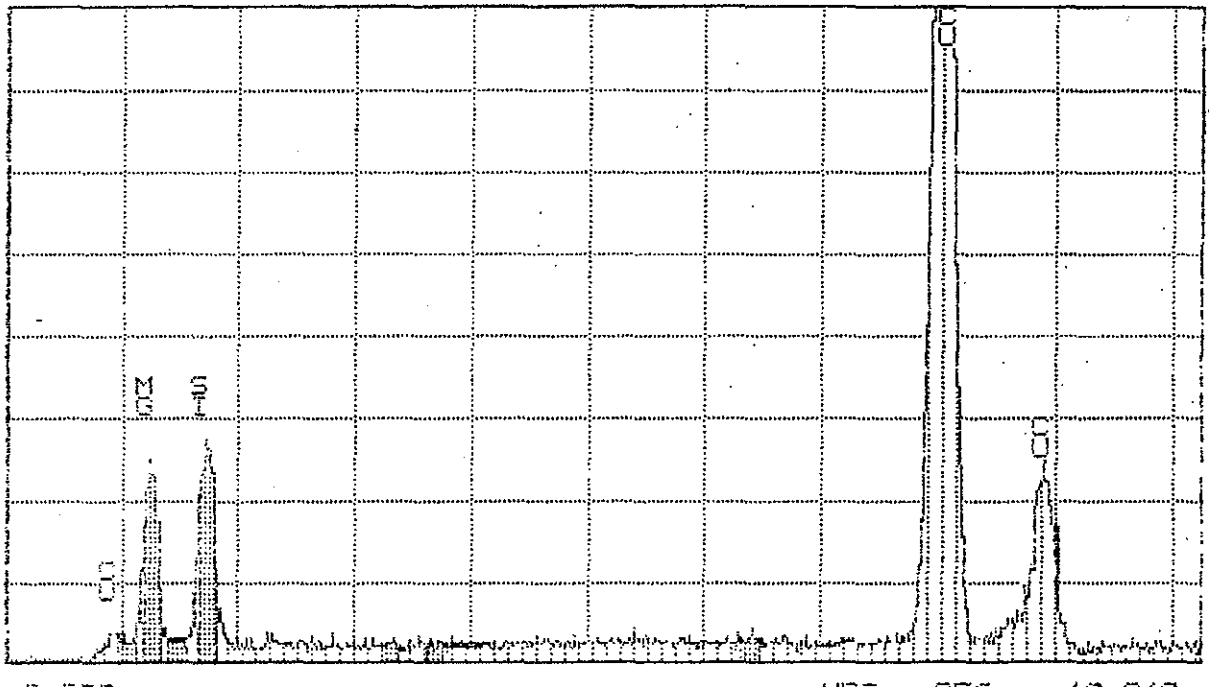
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
CALCITE (EDS) * VERY SMALL AMOUNTS

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:10

Cursor: 0.000KeV = 0 ROI (SIKø) 1.660: 1.810=1119

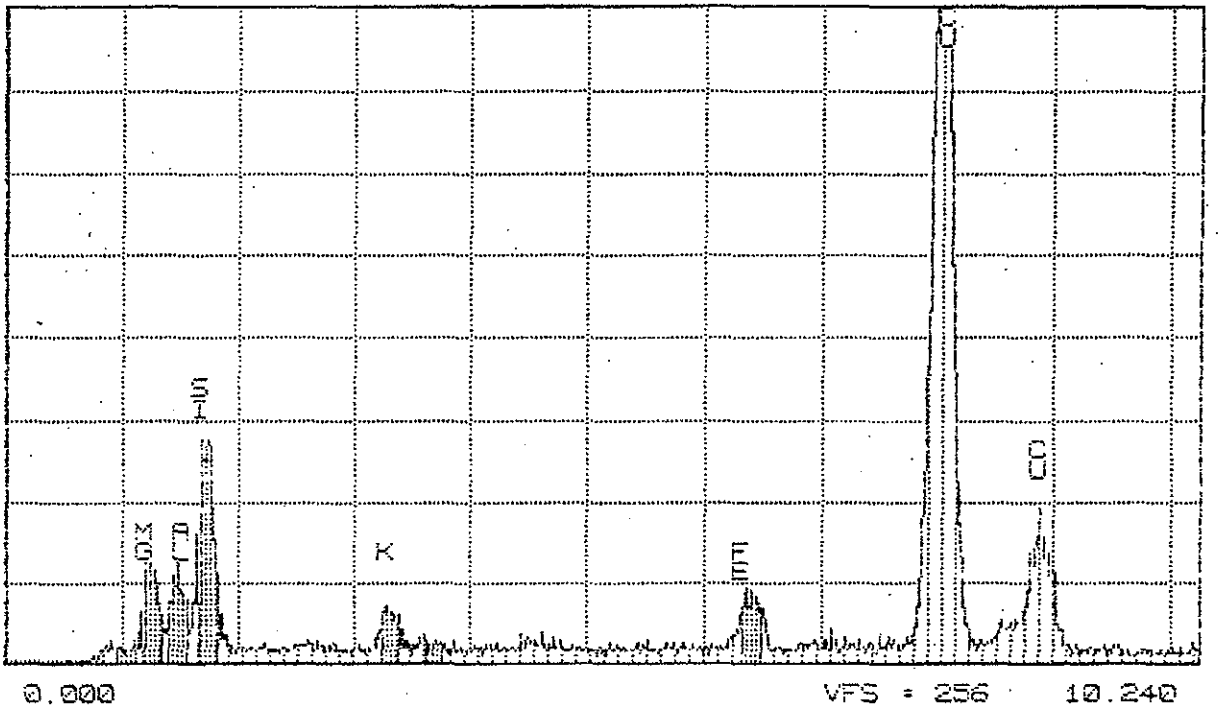


0.000 VFS = 256 10.240

24 M3177-4, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:20

Cursor: 0.000keV = 0 ROI (SiKα) 1.660: 1.810=1040

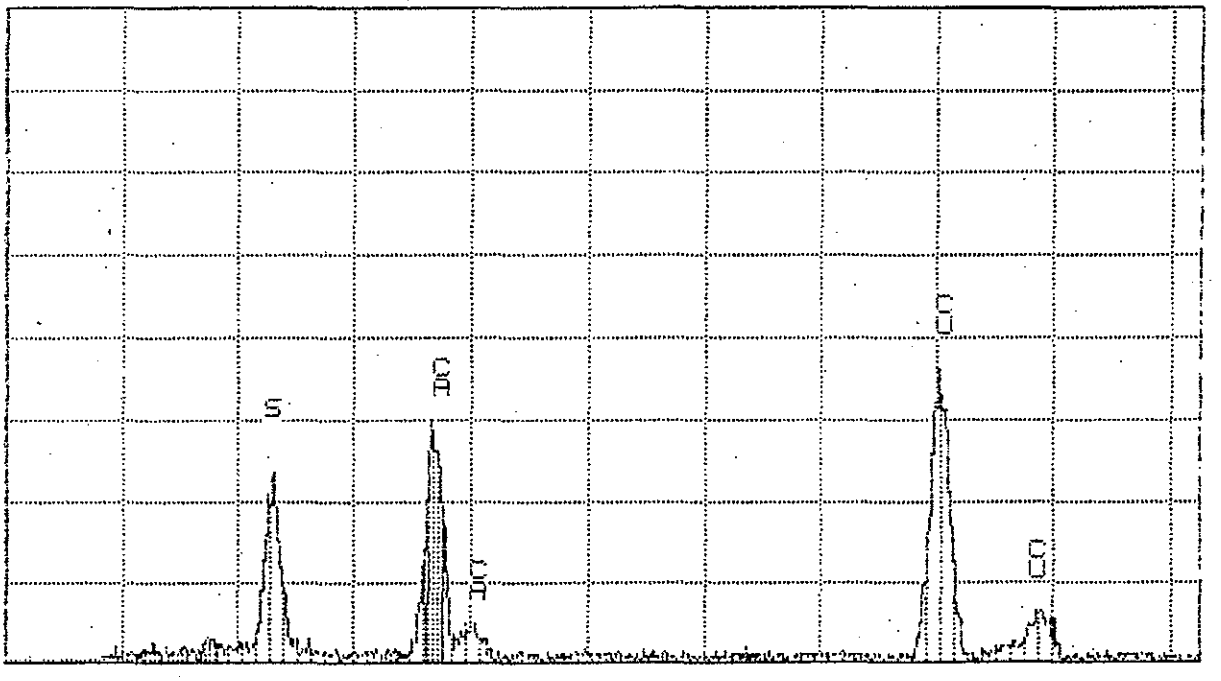


0.000 VFS = 256 10.240

10 M3177-4, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:12

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=103

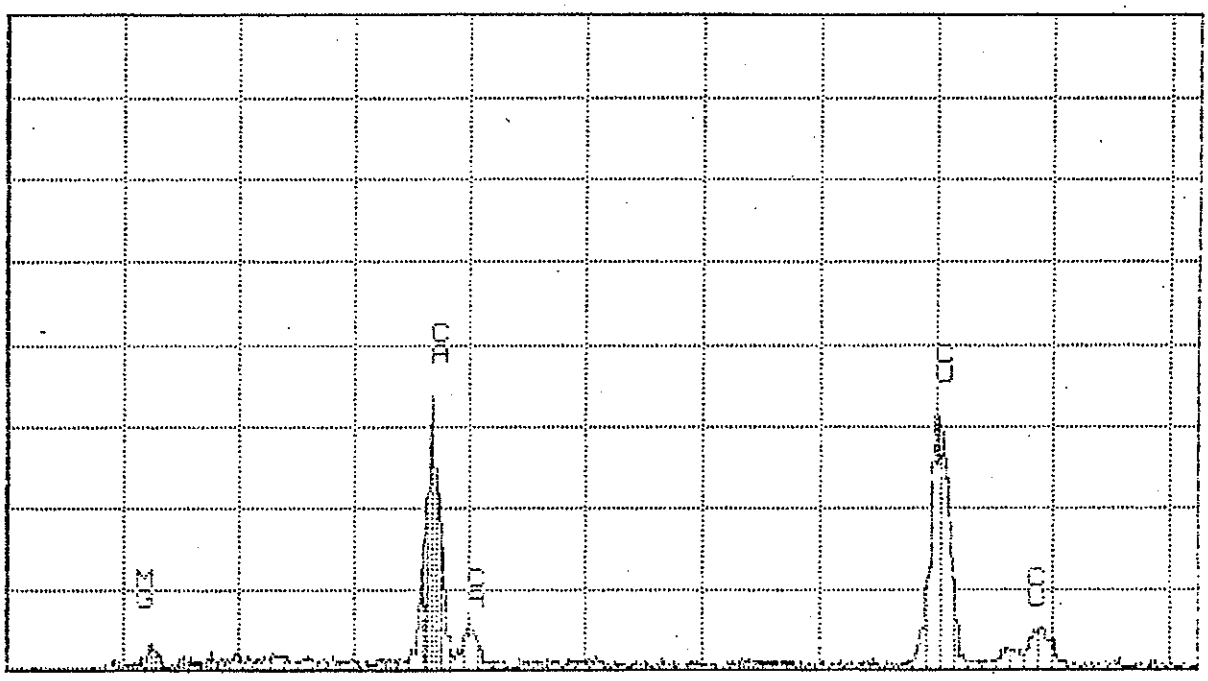


0.000 VFS = 256 10.240

5 M3177-4, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:22

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=60



0.000 VFS = 256 10.240

7 M3177-4, CALCITE

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-4 Analyst J.S.K.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.6100	g
(2) Petri dish minus sample:	7.3764	g
(3) Original sample weight:	1.2336	g
(4) Filter weight:	0.0594	g
(5) Clean petri dish weight:	7.3546	g
(6) Final sample weight plus filter and petri dish:	7.9282	g
(7) Final sample wt:((6) -[(4) + (5)])	0.5142	g
(8) Percent residue wt:((7)/(3) x 100)	41.7	%
(9) Amount in solution:(100 - (8))	58.3	%

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MATERIALS
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SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # M3177-4 Analyst W. B. Eglund

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-5 Date: 2/5/90

Project Name: 1100 Main Analyst: Hardiman

Sample Identification: 5B 33RD FLOOR.

Gross Visual Description: tan matrix paint on side, rust color other side, many fibers & gold flakes.

Optical Data for Asbestos Identification

Morphology	wavy		
Pleochroism	n		
Refractive Index	[illegible]		
Sign of Elongation	+		
Extinction	a		
Birefringence	low		
Melt			
Fiber Name	[illegible]		

ASBESTOS MINERALS: **Est. Vol. %**

Chrysotile	11
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	54

Chalky gypsum

EFFERVESCENCE: v. weak

COMMENTS: ASD

PIS 00111233

MATERIALS ANALYTICAL SERVICES, INC.
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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL 1100 MICAN 120.48
SAMPLE NUMBER: M3177-5
SAMPLE ID: #5B 33RD FLOOR

DATE OF ANALYSIS: 8/8/90

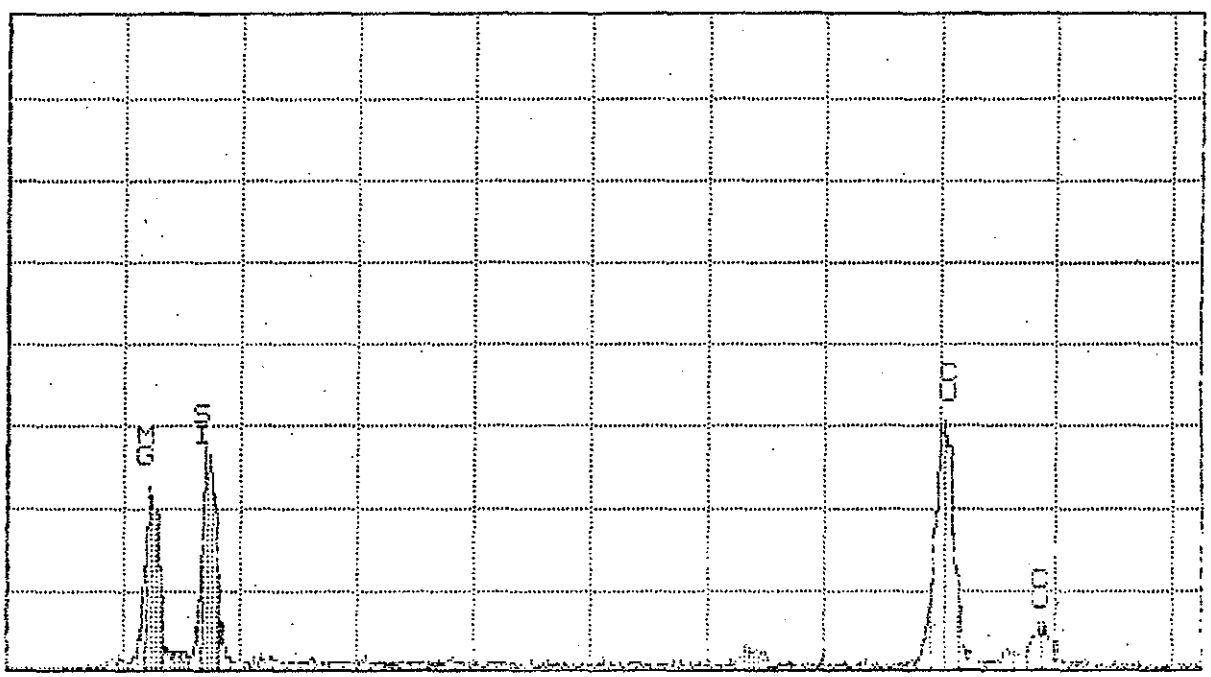
ANALYST: W.B. Eyl

Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
CALCITE (EDS) *TRACE
TiO_2 (EDS) SMALL AMOUNT

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:35
Cursor: 0.000keV = 0 ROI (SIKø) 1.650: 1.810=1033

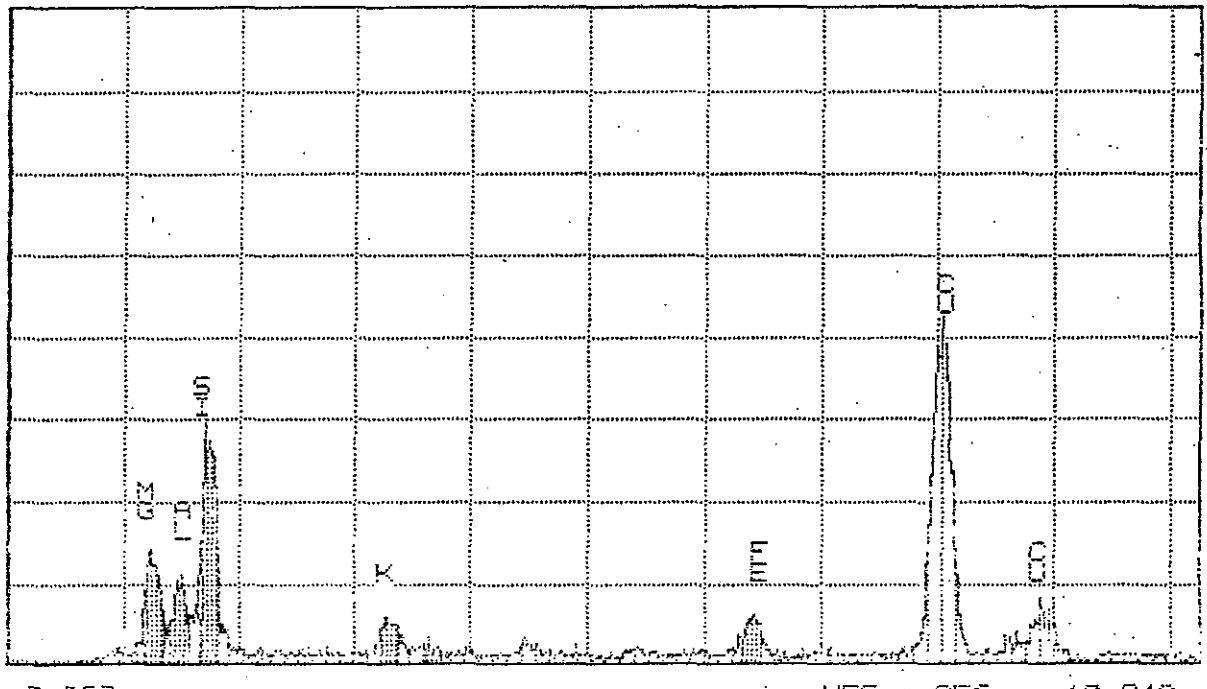


0.000 VFS = 256 10.240

12 M3177-5, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:32

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1128

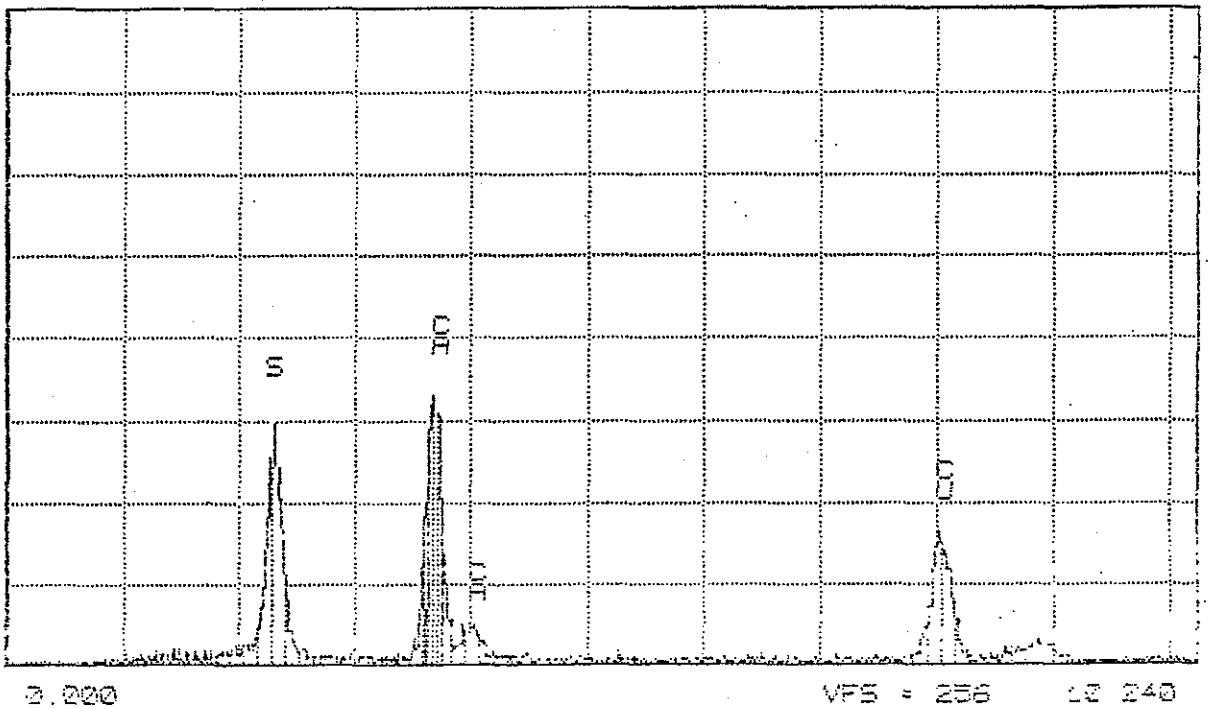


0.000 VFS = 256 10.240

20 M3177-5, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:36

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=52

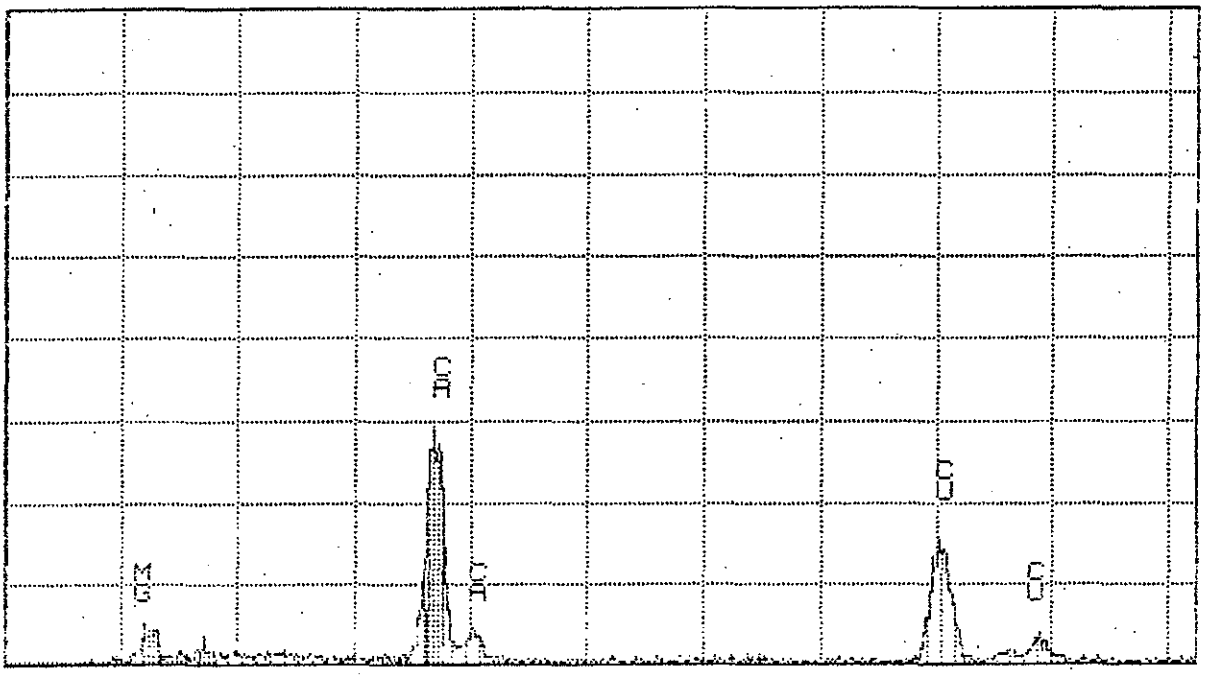


0.000 VFS = 256 LL 240

4 M3177-5, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:38

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=87

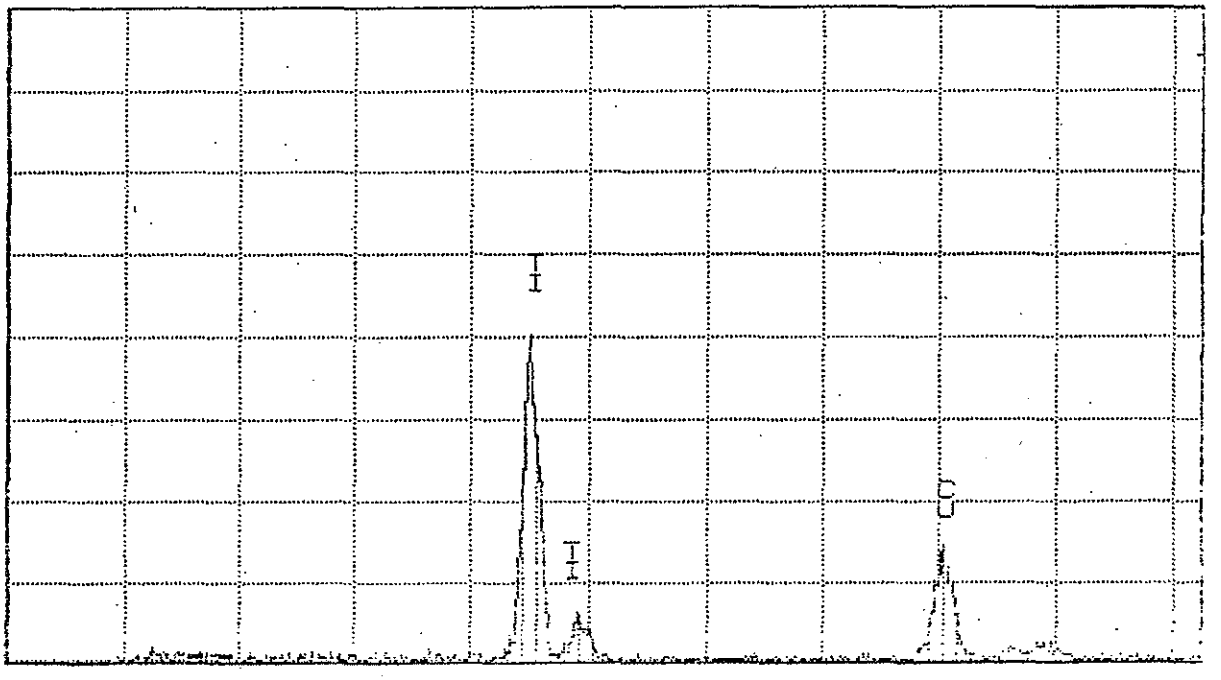


0.300 VFS = 256 10.240

5 M3177-5, CALCITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:41

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=52



0.000 VFS = 25E 10.240

-6 M3177-3, TC02

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-5 Analyst J.R.L.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8,0476	g
(2) Petri dish minus sample:	7,4409	g
(3) Original sample weight:	0.6067	g
(4) Filter weight:	0,0579	g
(5) Clean petri dish weight:	7,3946	g
(6) Final sample weight plus filter and petri dish:	7,7073	g
(7) Final sample wt:((6) -[(4) + (5)])	0,2548	g
(8) Percent residue wt:((7)/(3) x 100)	42.0	%
(9) Amount in solution:(100 - (8))	58.0	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # 13177-5 Analyst W.B. Eyl

Date 8/9/96

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-6 Date: 9/2/50

Project Name: 1100 Main Analyst: Henderson

Sample Identification: 6B 41ST FLOOR

Gross Visual Description: TAN matrix, mist colored one side, print other side, wavy fibers, gold flakes.

Optical Data for Asbestos Identification

Morphology	wavy
Pleochroism	no
Refractive Index	1.5?L 1.55?
Sign of Elongation	+
Extinction	o
Birefringence	low
Melt	
Fiber Name	Chry.

ASBESTOS MINERALS: **Est. Vol. %**

Chrysotile	11
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	54

Sundhat gypsum

EFFERVESCENCE: non detected

COMMENTS:

ND

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404/448-3200

TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL : 1100 PICAN : 130.48
SAMPLE NUMBER: M 3177-6
SAMPLE ID: #6B 41ST FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W.B. Eglad

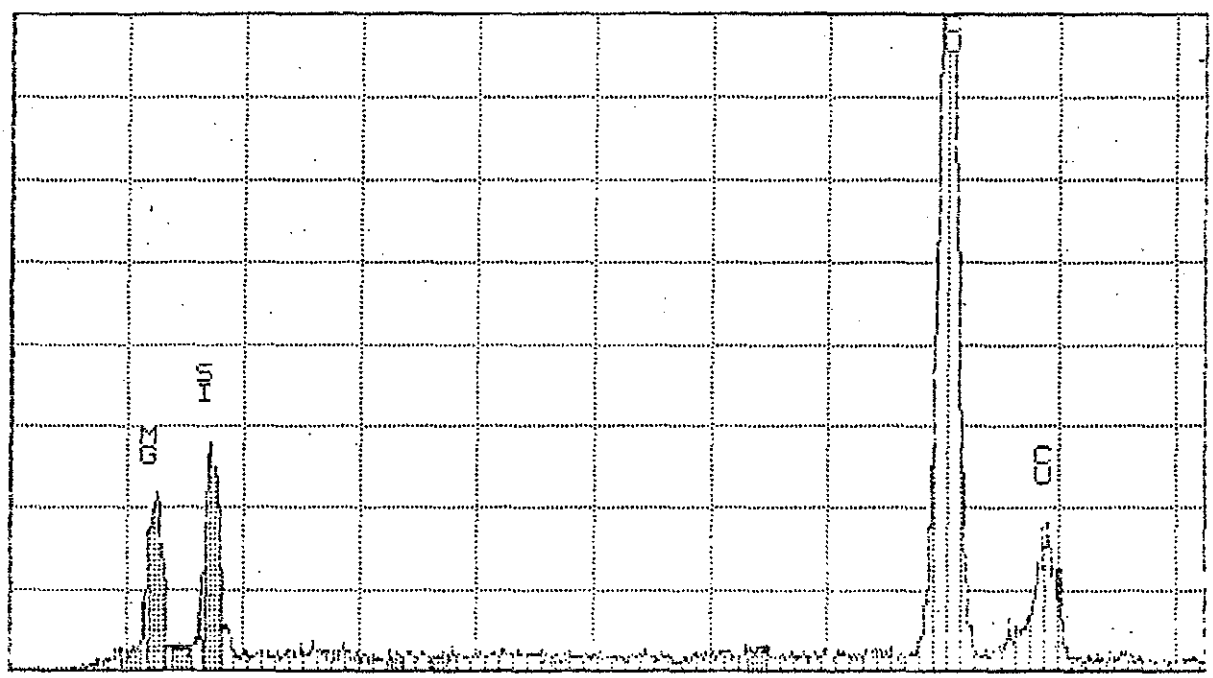
Asbestos Minerals: CHRYSOTICE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
TiO_2 (EDS)(DIFF) * TRACE
CALCITE (EDS)(DIFF) * TRACE

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:59

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1033

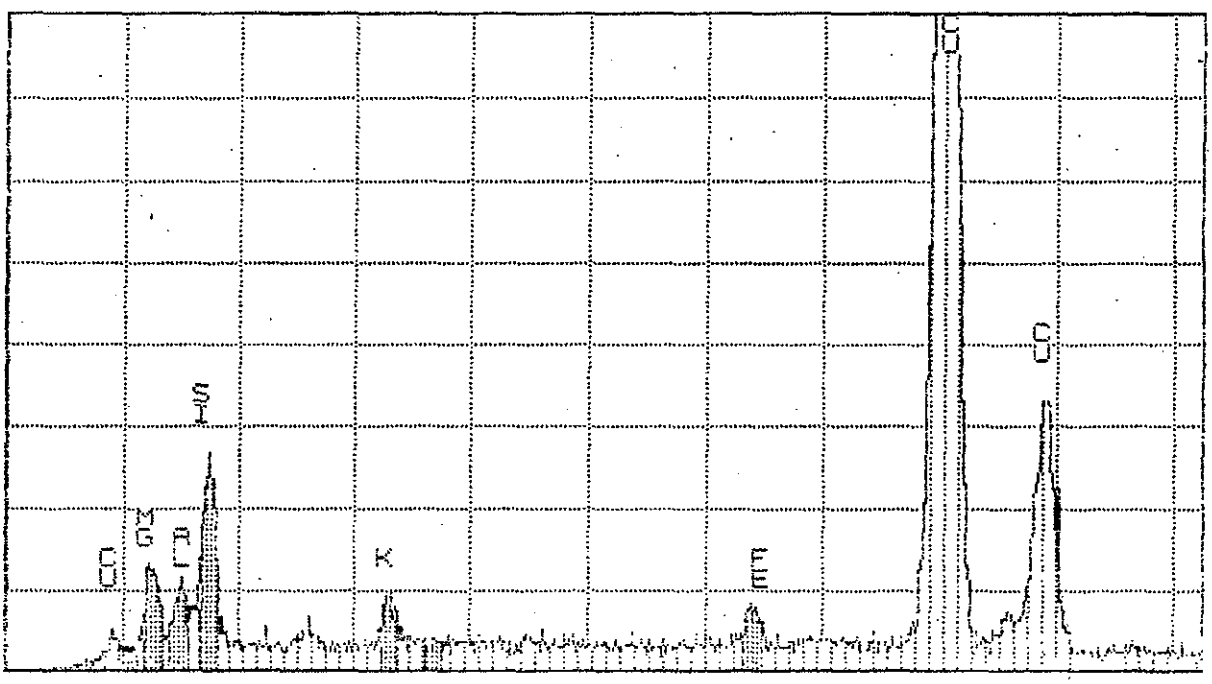


0.000 VFS = 256 10 240

43 M3177-6, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:54

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1004

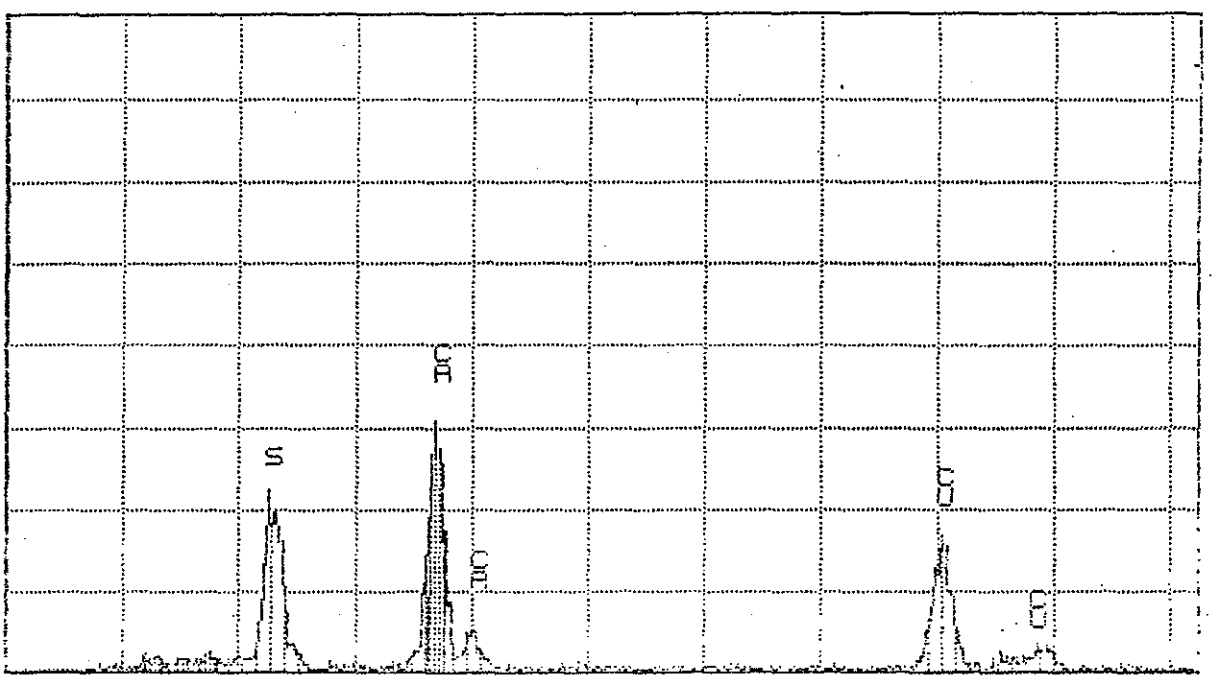


0.000 VFS = 256 10.240

77 M3177-6, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 12:56

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=78

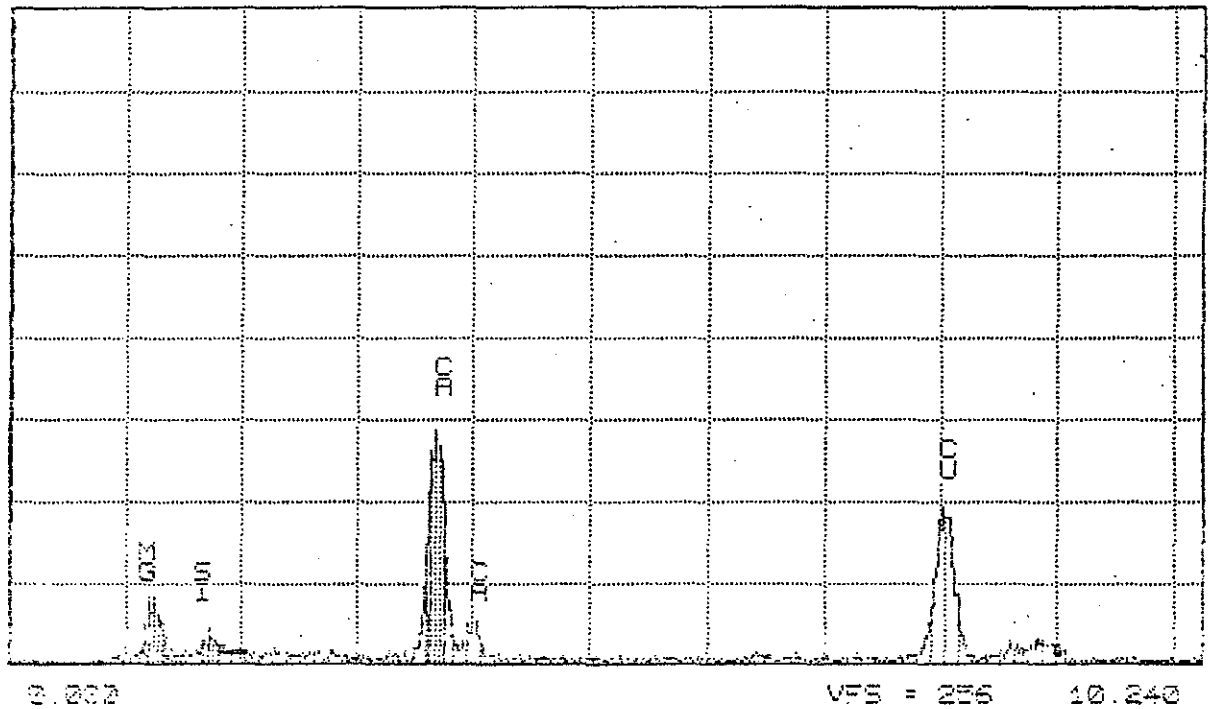


2.000 VFS = 256 10.240

4 M3177-5, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 13:02

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=134

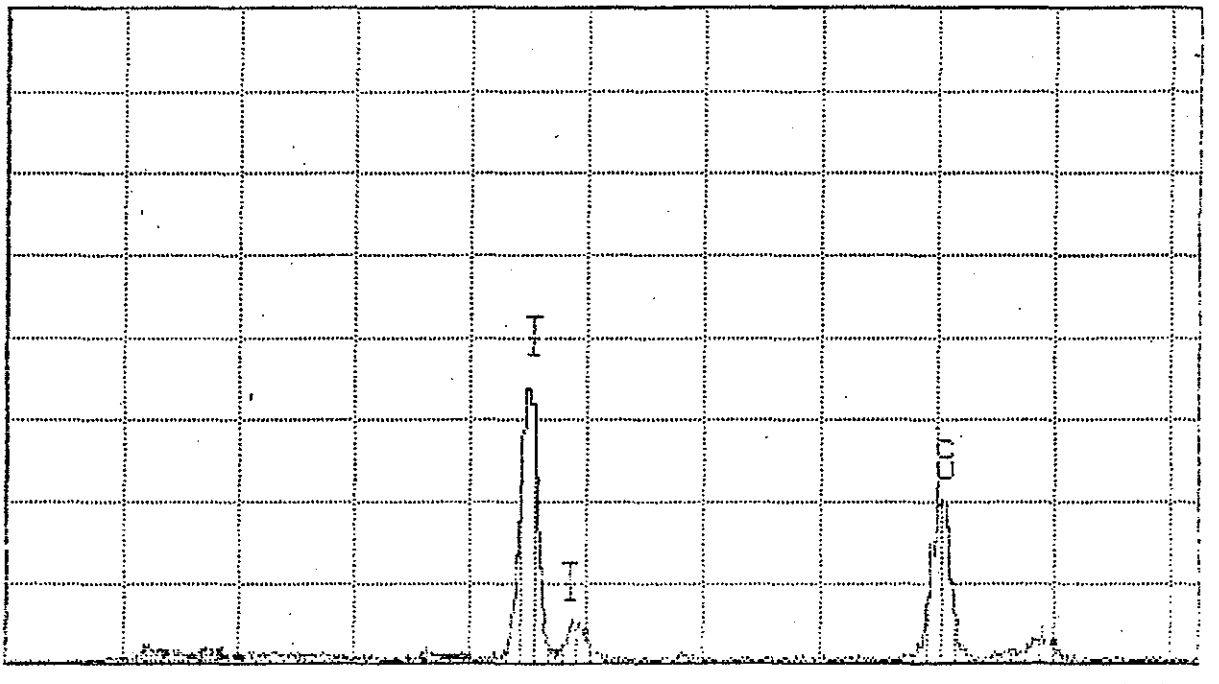


0.000 VFS = 256 10.240

12 YS177-6, CALCITE W/ CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 13:07

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=73



0.000 VFS = 256 10.240

8 M3177-6. TIO2

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # 43177-6 Analyst S.K.P.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.5047	g
(2) Petri dish minus sample:	7.3652	g
(3) Original sample weight:	1.1395	g
(4) Filter weight:	00572	g
(5) Clean petri dish weight:	7.3524	g
(6) Final sample weight plus filter and petri dish:	7.9198	g
(7) Final sample wt:((6) -[(4) + (5)])	0.5102	g
(8) Percent residue wt:((7)/(3) x 100)	44.8	%
(9) Amount in solution:(100 - (8))	55.2	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # M3177-6 Analyst W.B. Egl

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed (no) ✓

yes _____

Iodine test (ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M 3177-7 Date: 9/6/90

Project Name: 1100 Main Analyst: Henderson

Sample Identification: 78 40TH FLOOR

Gross Visual Description: tan matrix, rust color one side, PAINTED OTHER SIDE, white fibers, gold-flakes

Optical Data for Asbestos Identification

Morphology	wavy			
Pleochroism	no			
Refractive Index	1.54 1.681			
Sign of Elongation	+			
Extinction	⊿			
Birefringence	low			
Melt				
Fiber Name	Cry			

ASBESTOS MINERALS: **Est. Vol. %**

Chrysotile	10
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	55

Cement based gypsum

EFFERVESCENCE: V. weak

COMMENTS: NAD

MATERIALS ANALYTICAL SERVICES, INC.
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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL 1100 PICAN 120.48
SAMPLE NUMBER: M3177-7
SAMPLE ID: # 7B 40TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W. B. Eyeland

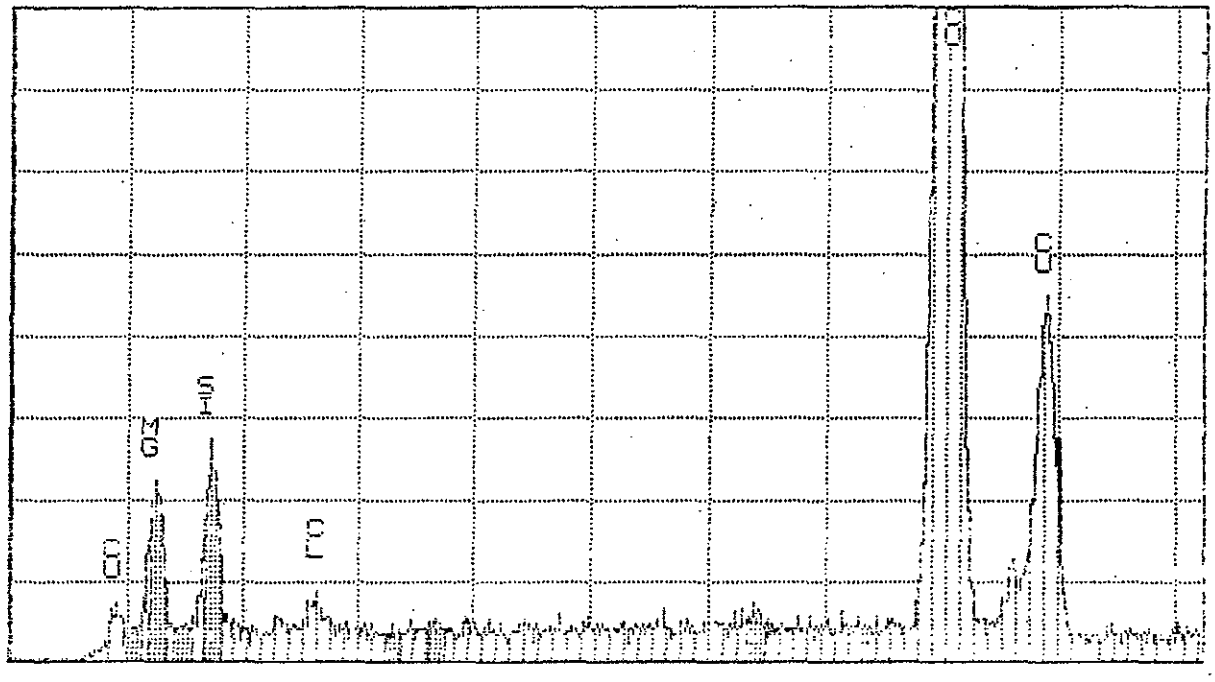
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
CALCITE (EDS)(DIFF) SMALL AMOUNT

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 13:47

Cursor: 0.000keV = 0 ROI (SiKα) 1.660: 1.810=1001

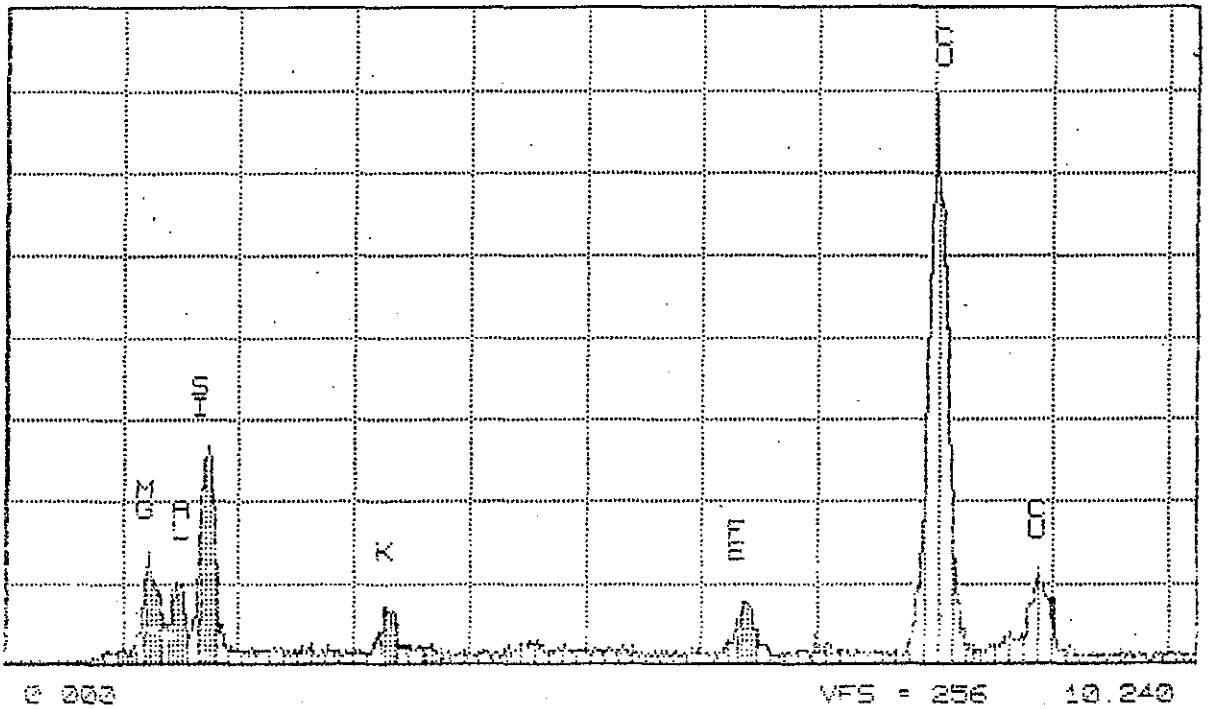


0.000 VFS = 256 20.240

44 MS177-7, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 13:45

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1033

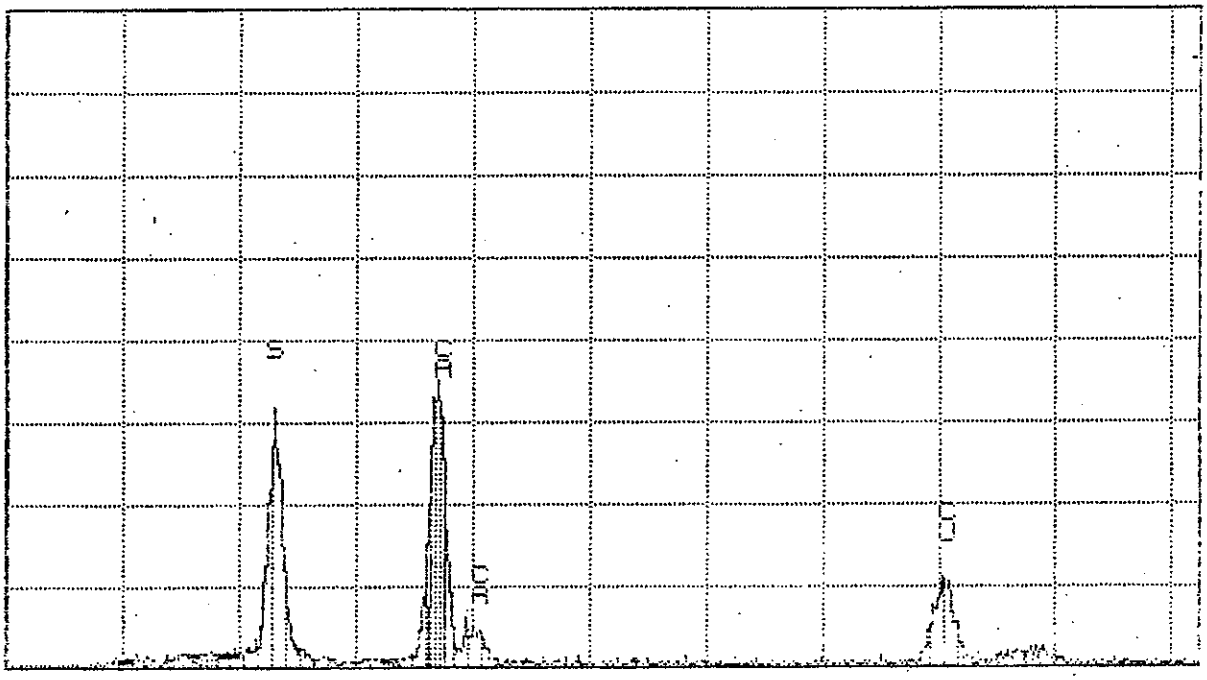


0 003 VFS = 256 10.240

9 M2177-7, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 13:43

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=73

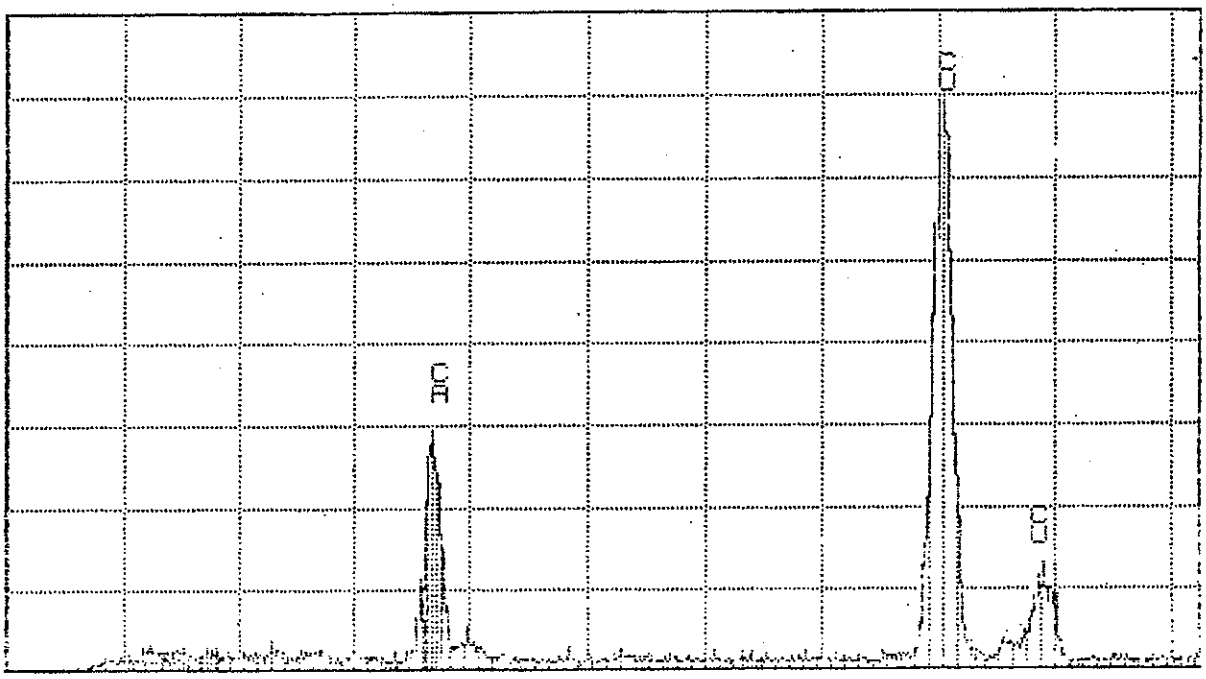


0.000 VFS = 255 10.240

S M3177-7, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 13:50

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=100



0.000 VFS = 256 10.240

11 M3177-7, CALCITE

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-7 Analyst J. F. P.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.5237	g
(2) Petri dish minus sample:	7.3385	g
(3) Original sample weight:	1.1852	g
(4) Filter weight:	0.0575	g
(5) Clean petri dish weight:	7.3721	g
(6) Final sample weight plus filter and petri dish:	7.9116	g
(7) Final sample wt:((6) -[(4) + (5)])	0.4769	g
(8) Percent residue wt:((7)/(3) x 100)	40.2	%
(9) Amount in solution:(100 - (8))	59.8	%

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MATERIALS
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SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # D3177-7

Analyst U.B. Eyl

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-8 Date: 7/6/10

Project Name: 1100 Mile Analyst: Henderson

Sample Identification: 8B 26TH FLOOR

Gross Visual Description: tan matrix w/ some fibers & gold flakes, not color one side.

Optical Data for Asbestos Identification

Morphology	wavy
Pleochroism	no
Refractive Index	1.550 & 1.680
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	
Fiber Name	Chry

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	11
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	54

calcium gypsum

EFFERVESCENCE: weak

COMMENTS: MD

PIS 00111259

MATERIALS ANALYTICAL SERVICES, INC.
3597 Parkway Lane, Suite 250
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404/448-3200

TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL 1800 MICAM 120.48
SAMPLE NUMBER: M3177-8
SAMPLE ID: #8B 26TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W.B. Eyl

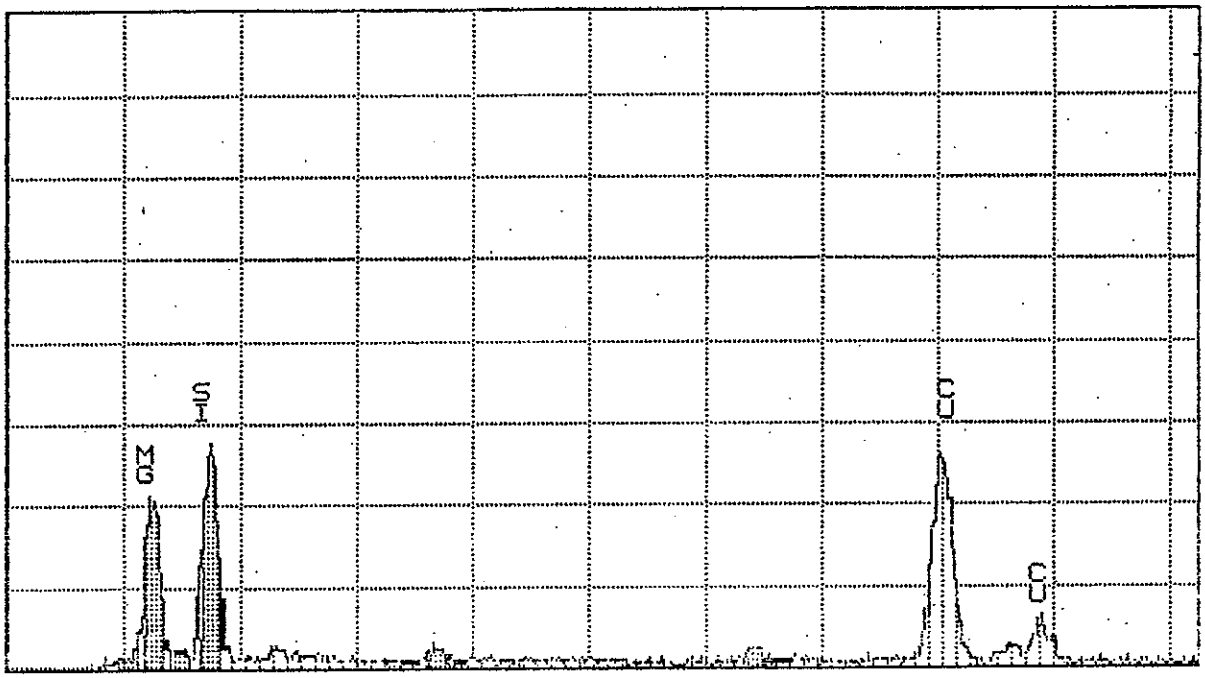
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)(
GYPSUM (EDS)(DIFF)
CALCITE (EDS) *TRACE

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:44

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1027

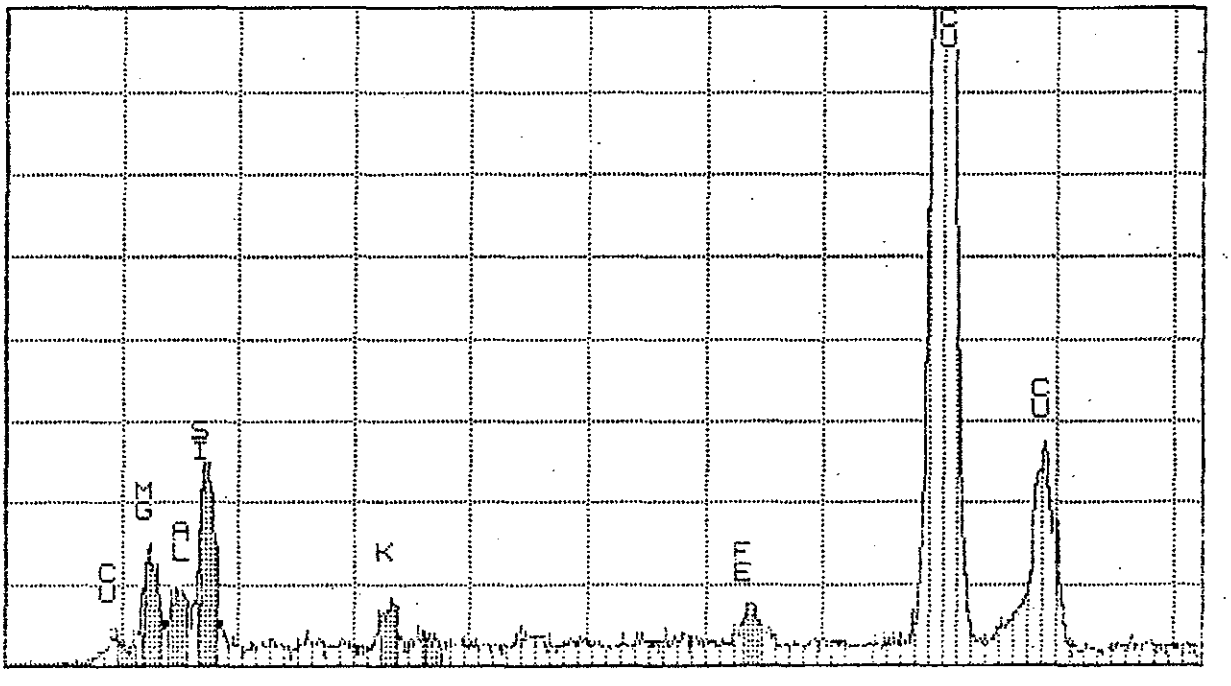


0.000 VFS = 256 10.240

12 M3177-8, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:41

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1017



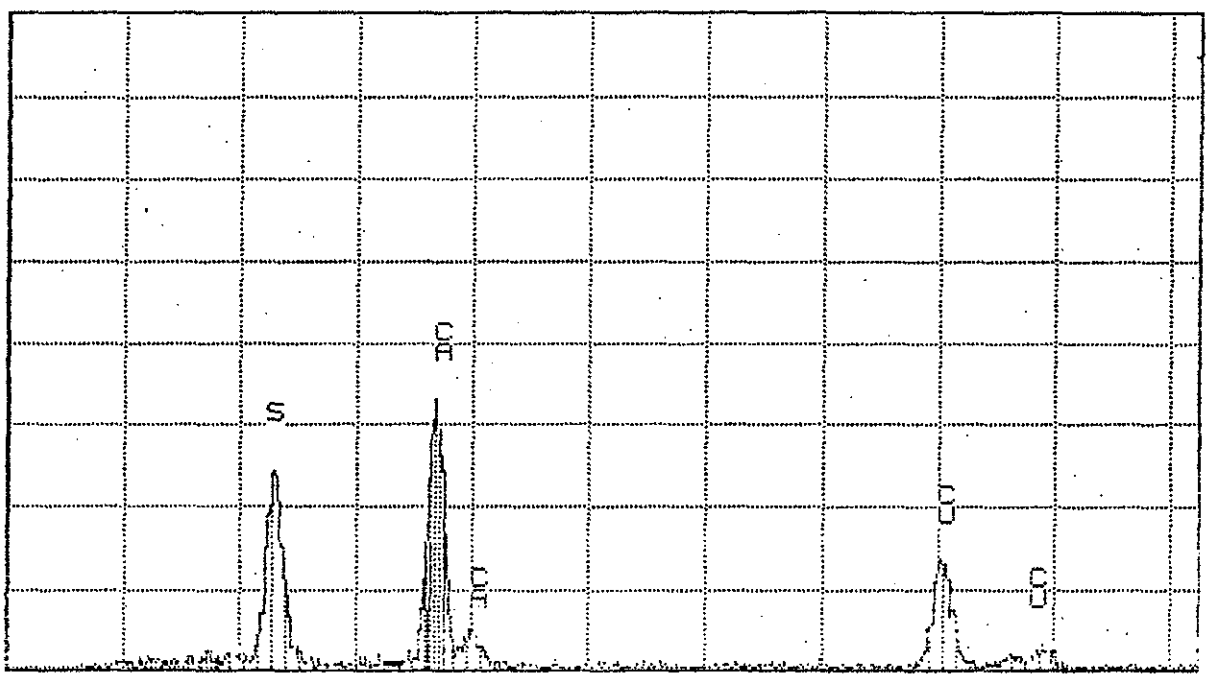
0.000 VFS = 256 10.240

10 M3177-8, VERMICULITE

PIS 00111262

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:42

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=68

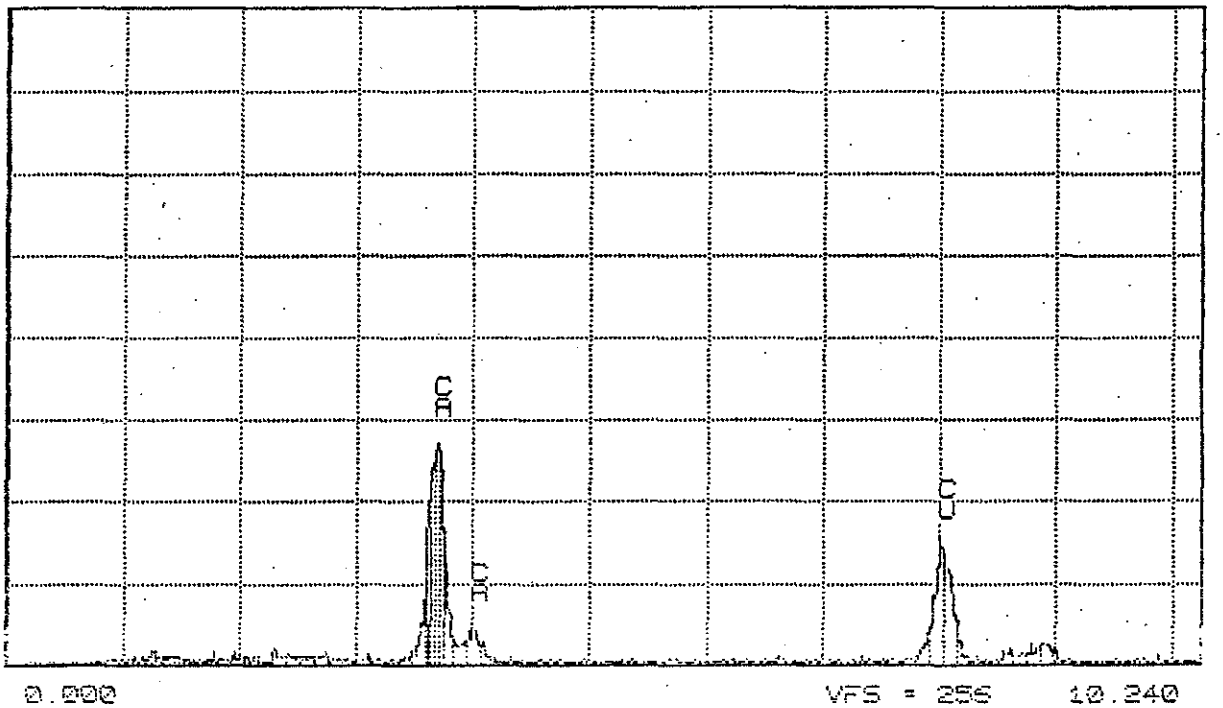


0.000 VFS = 256 10.240

4 M3177-8 GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:45

Cursor: 0.000keV = 0 ROI (SiKα) 1.660: 1.810=34



0.000 VFS = 256 10.240

4 MS177-8, CALCITE

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # 13177-8 Analyst J.K.P.

Date 08/07/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.9653	g
(2) Petri dish minus sample:	7.8489	g
(3) Original sample weight:	1.1164	g
(4) Filter weight:	0.0619	g
(5) Clean petri dish weight:	7.3833	g
(6) Final sample weight plus filter and petri dish:	7.9077	g
(7) Final sample wt:((6) -[(4) + (5)])	0.4625	g
(8) Percent residue wt:((7)/(3) x 100)	41.4	%
(9) Amount in solution:(100 - (8))	58.6	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # A3177-8 Analyst W.B. Eyl

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

PIS 00111266

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-9 Date: 9/6/90

Project Name: 1100 Main Analyst: Henderson

Sample Identification: 9B 12TH FLOOR.

Gross Visual Description: tan matrix, painted one side, rust color other side, wispy fibers, gold flakes.

Optical Data for Asbestos Identification

Morphology			
Pleochroism.			
Refractive Index			
Sign of Elongation			
Extinction			
Birefringence.			
Melt			
Fiber Name			

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	53

abundant gypsum

EFFERVESCENCE: weak

COMMENTS: ND

PIS 00111267

MATERIALS ANALYTICAL SERVICES, INC.
3597 Parkway Lane, Suite 250
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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL 1100 MILAM 120.48
SAMPLE NUMBER: M3177-9
SAMPLE ID: #9B 12TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W.B. Eglad

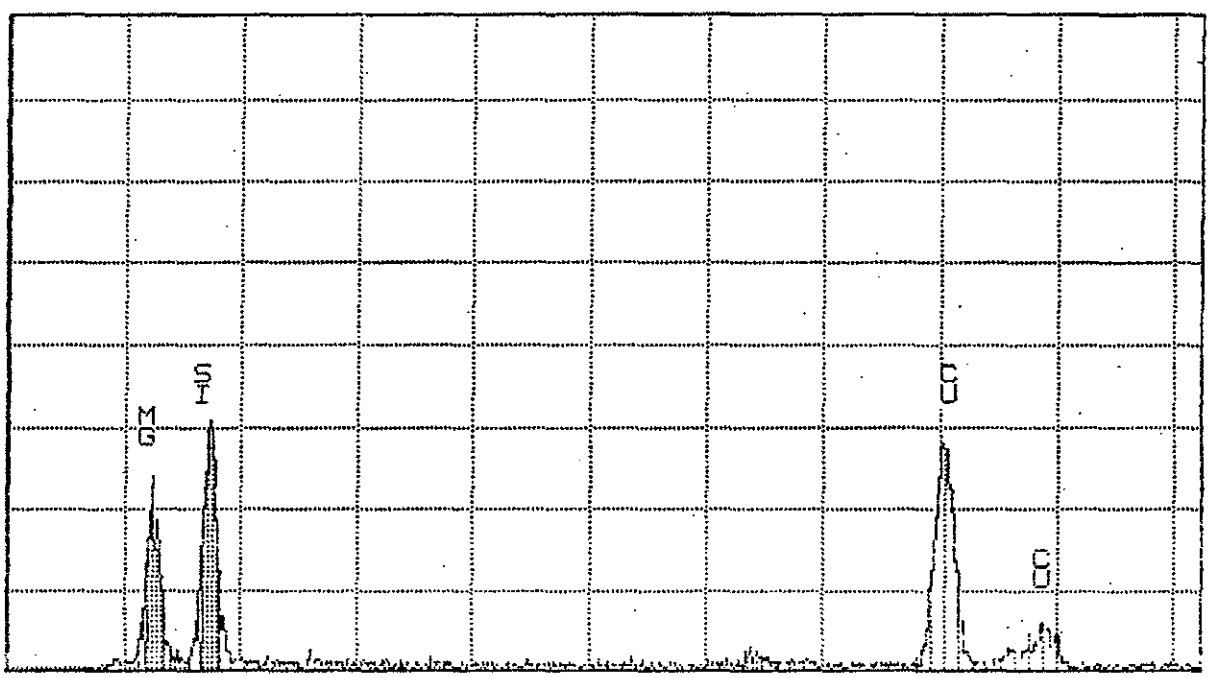
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
CALCITE (EDS)(DIFF) * TRACE
IRON (EDS) * TRACE
TiO_2 (EDS)(DIFF)

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:01

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1092

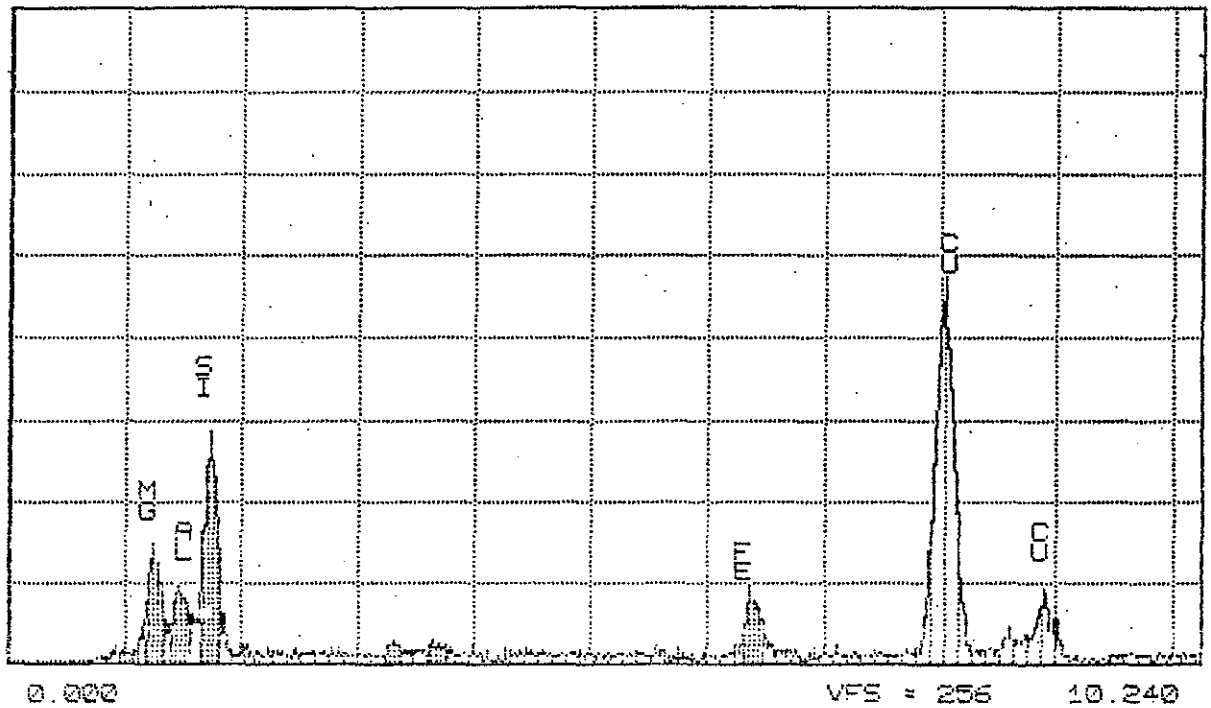


0.000 VFS = 256 10.240

16 M3177-9, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:58

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1026

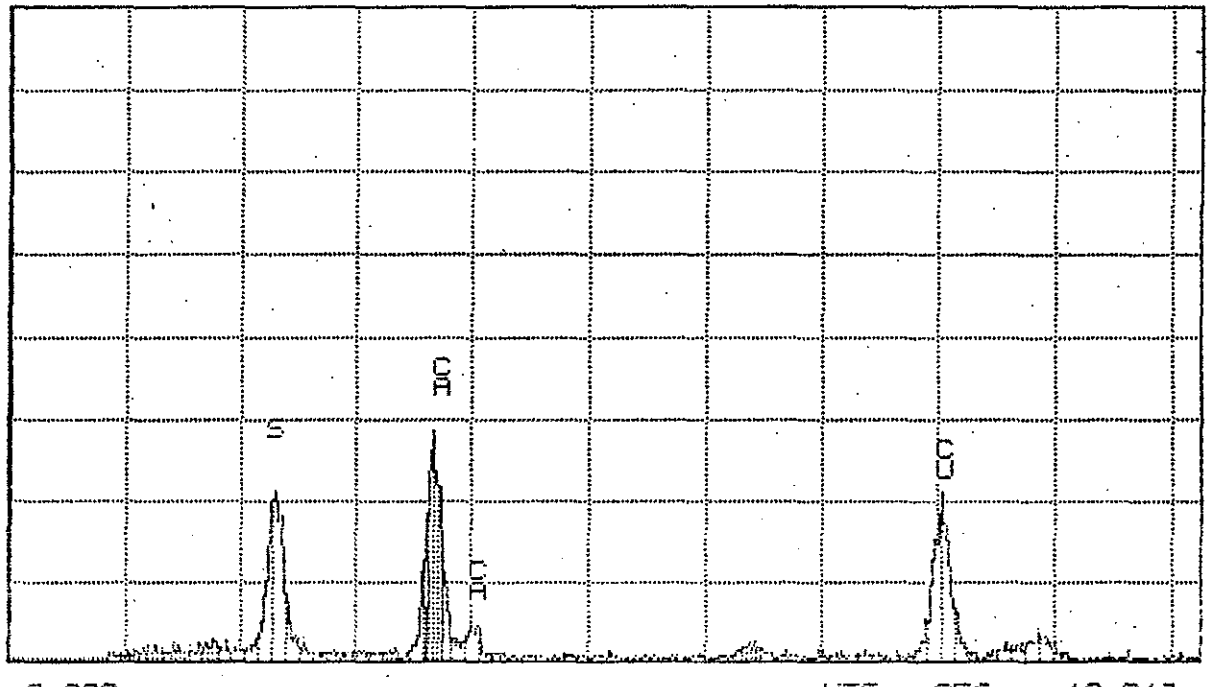


0.000 VFS = 256 10.240

28 M3177-9, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:59

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=99

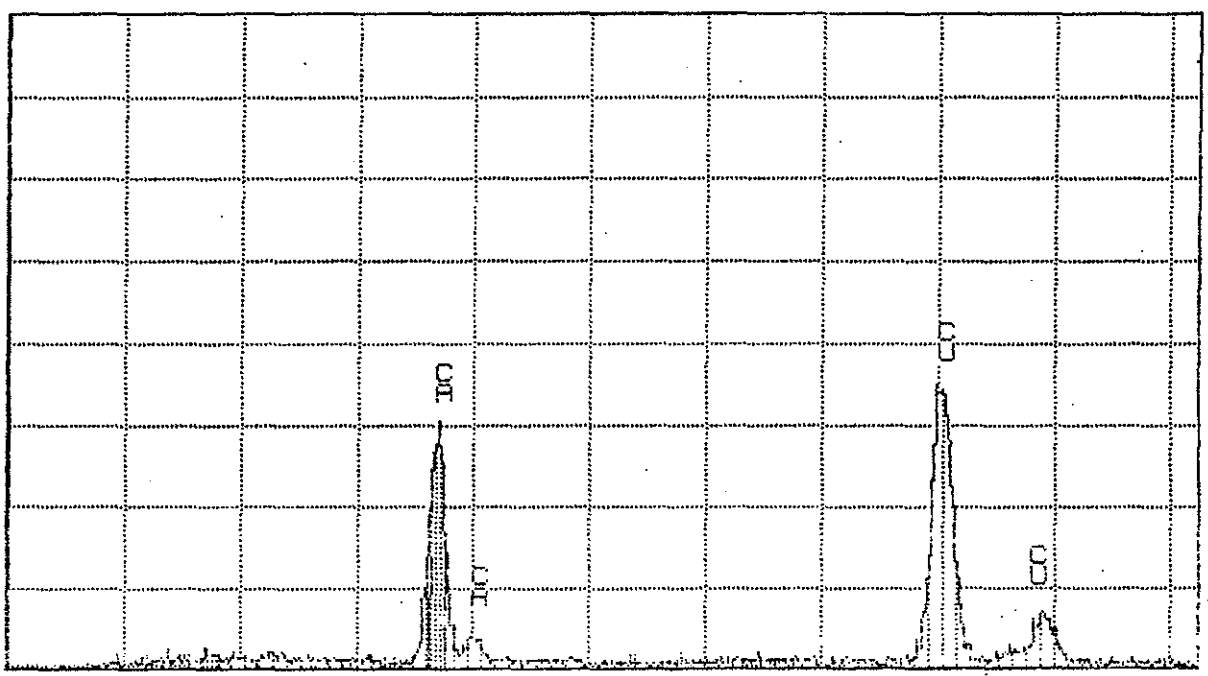


0.000 VFS = 256 10.240

7 M3177-9, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:10

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=82

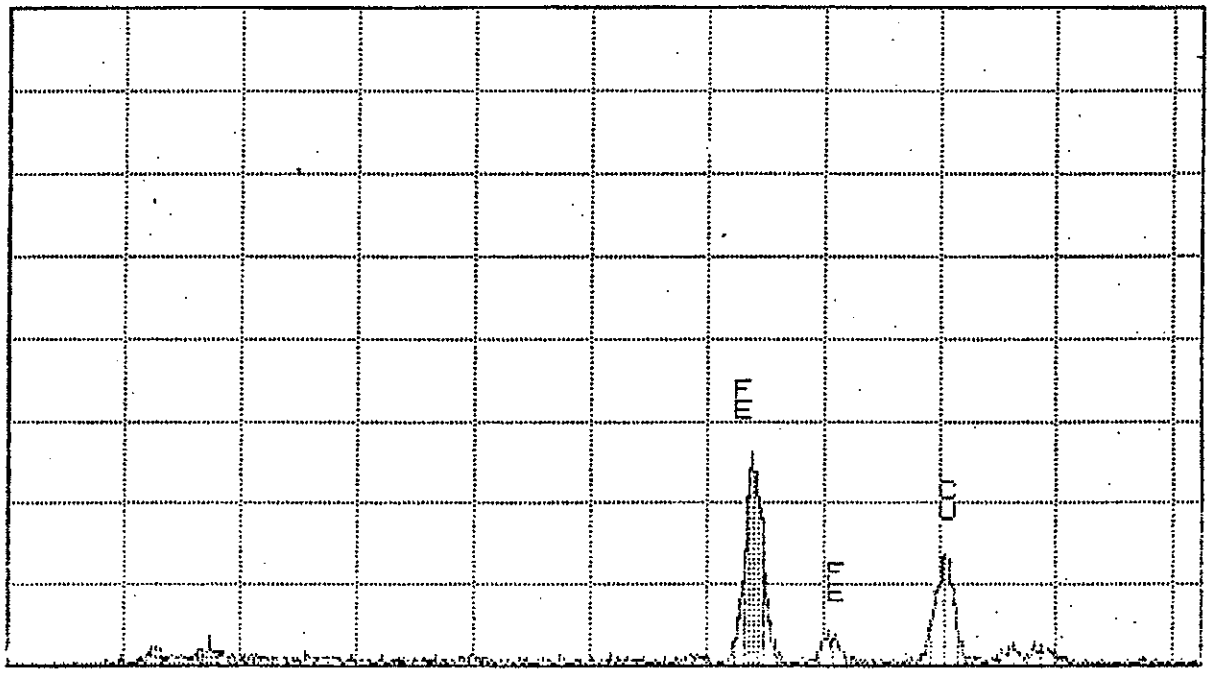


0.000 VFS = 256 10.240

6 M3177-9, CALCITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:07

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=89

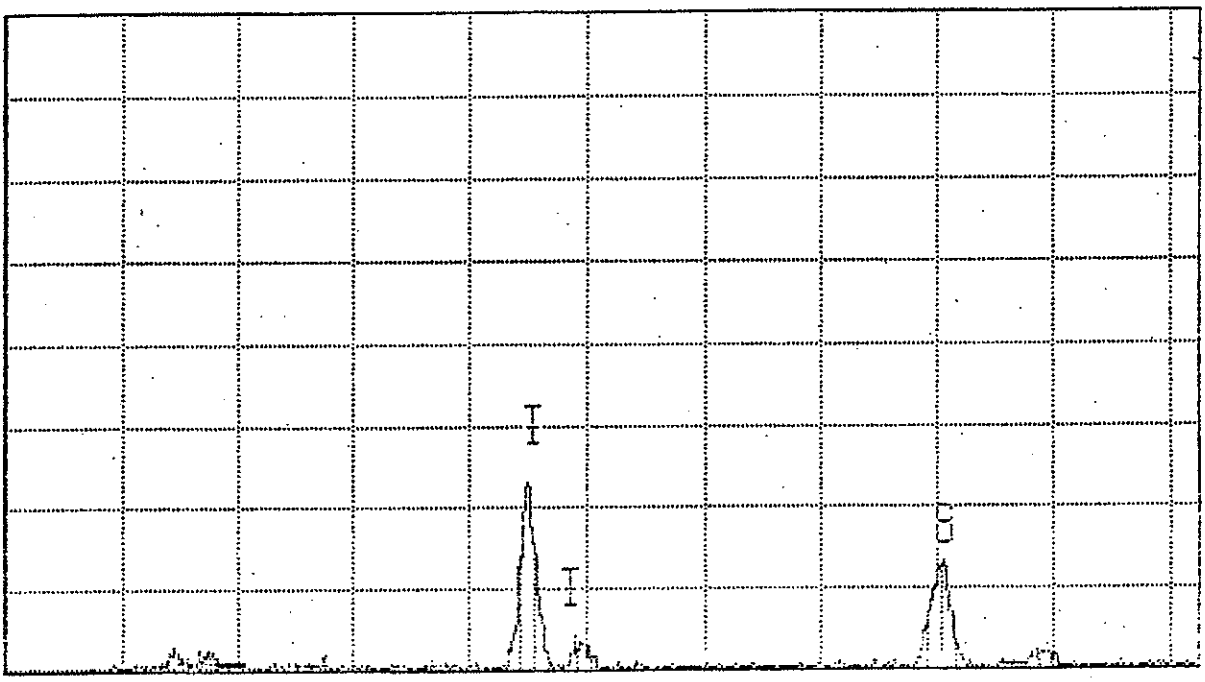


0.000 VFS = 256 10.240

48 M3177-9, IRON

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 14:56

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=95



0.000 VFS = 256 10.240

3 M3177-9, TIO2

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-9 Analyst J.K.R.

Date 08/06/90

ACID DISSOLUTION

(1) Petri dish plus sample:	9.3558	g
(2) Petri dish minus sample:	8.0519	g
(3) Original sample weight:	1.3039	g
(4) Filter weight:	0.0623	g
(5) Clean petri dish weight:	7.3638	g
(6) Final sample weight plus filter and petri dish:	8.0169	g
(7) Final sample wt:((6) -[(4) + (5)])	0.5908	g
(8) Percent residue wt:((7)/(3) x 100)	45.3	%
(9) Amount in solution:(100 - (8))	54.7	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # M3177-9 Analyst U. R. Eyde

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes ____

Iodine test
(ceiling tile only)

positive ____

negative ____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-10 Date: 9/6/90

Project Name: 1100 Main Analyst: Henderson

Sample Identification: 10B 10TH FLOOR

Gross Visual Description: tan matrix, gold flakes, white print on side, rust color other side, wavy fibers

Optical Data for Asbestos Identification

Morphology	wavy		
Pleochroism	no		
Refractive Index	1.54 LINE		
Sign of Elongation	+		
Extinction	0		
Birefringence	low		
Melt			
Fiber Name			

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	10
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:	
Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

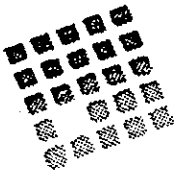
NON-FIBROUS COMPONENTS:	
Perlite	
Vermiculite	35
Other	
Binders	55

Binders: calcium carbonate gypsum

EFFERVESCENCE: weak

COMMENTS: ND

PIS 00111277



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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL 1100 MICAN 120.48
SAMPLE NUMBER: M3177-10
SAMPLE ID: #10B 10TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W.B. Eglund

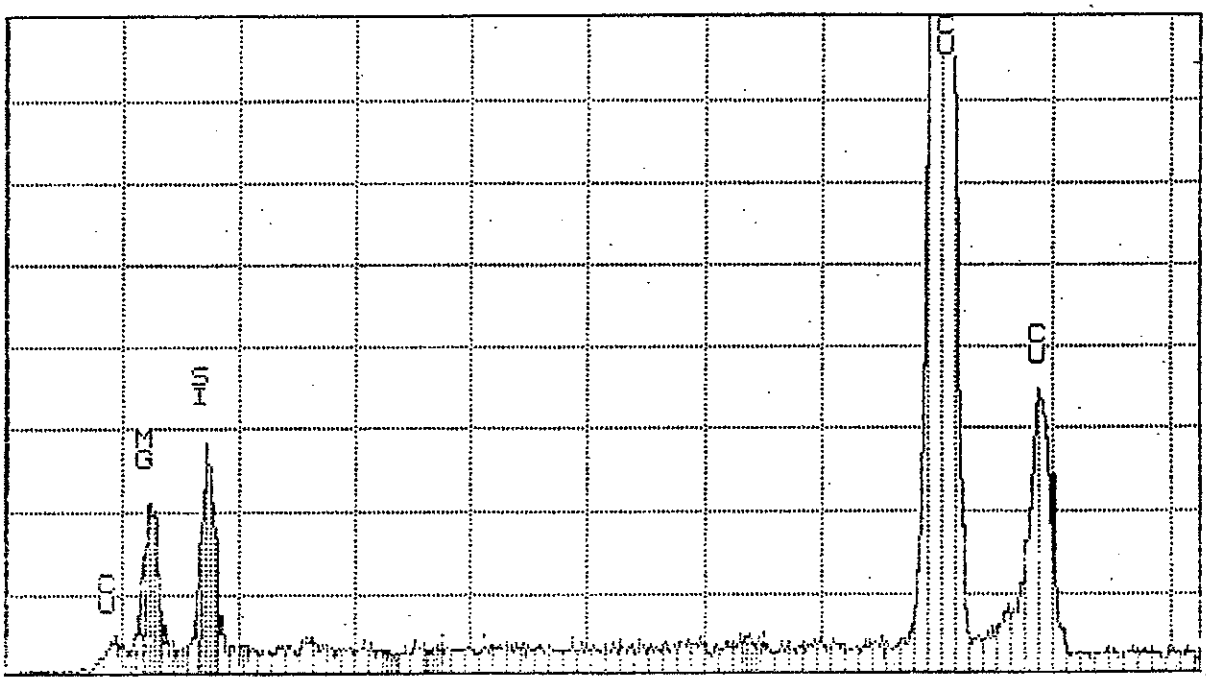
Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
TiO_2 (EDS)*TRACE
IRON (EDS)*TRACE

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:40

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1013

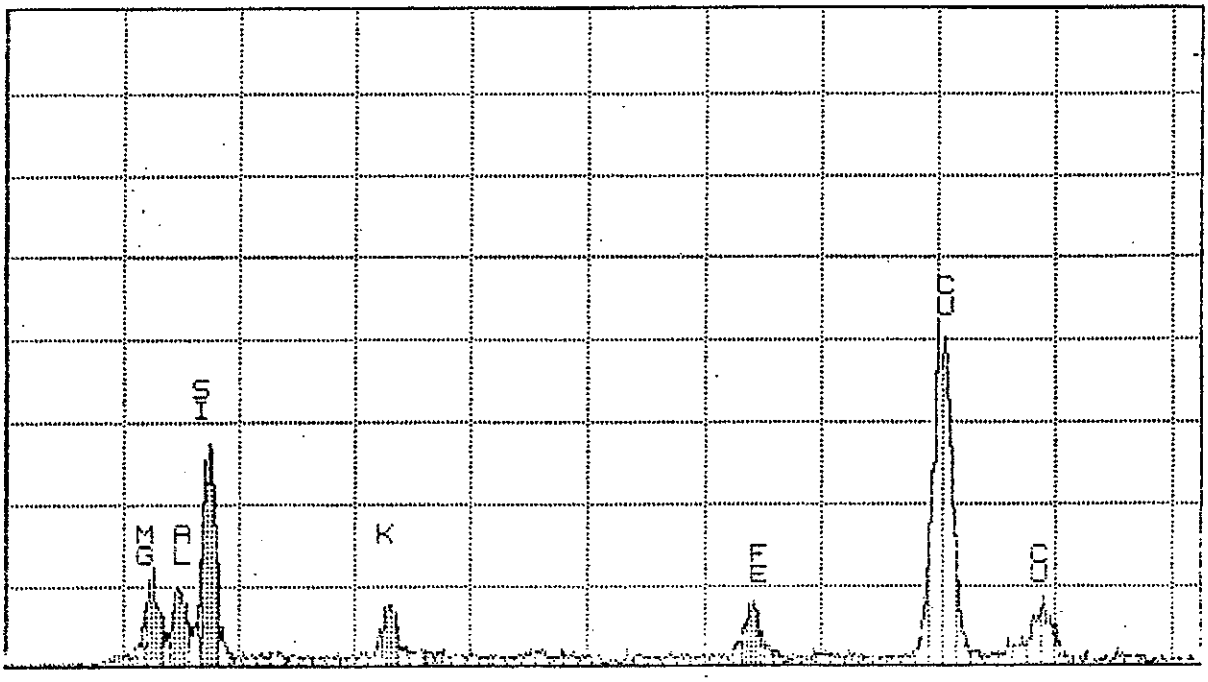


@ 000 VFS = 256 10.240

32 M3177-10, CHRYSOTILE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:37

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1016

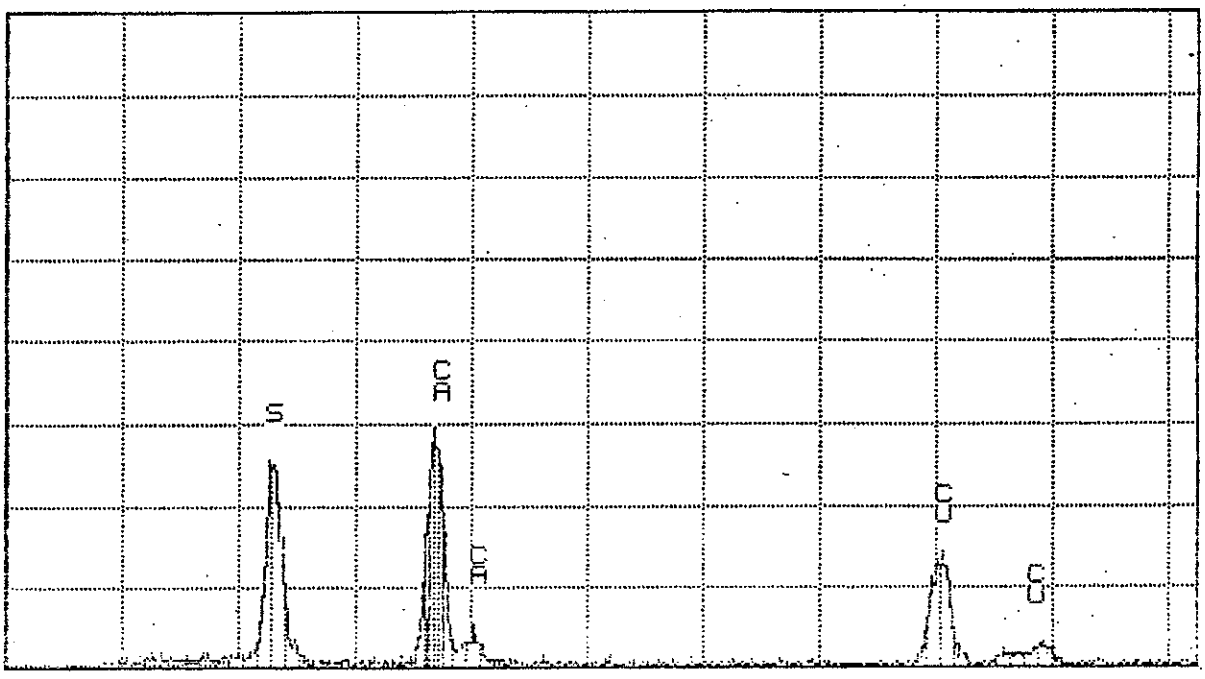


0.000 VFS = 256 10.240

27 M3177-10, VERMICULITE

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:39

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=51

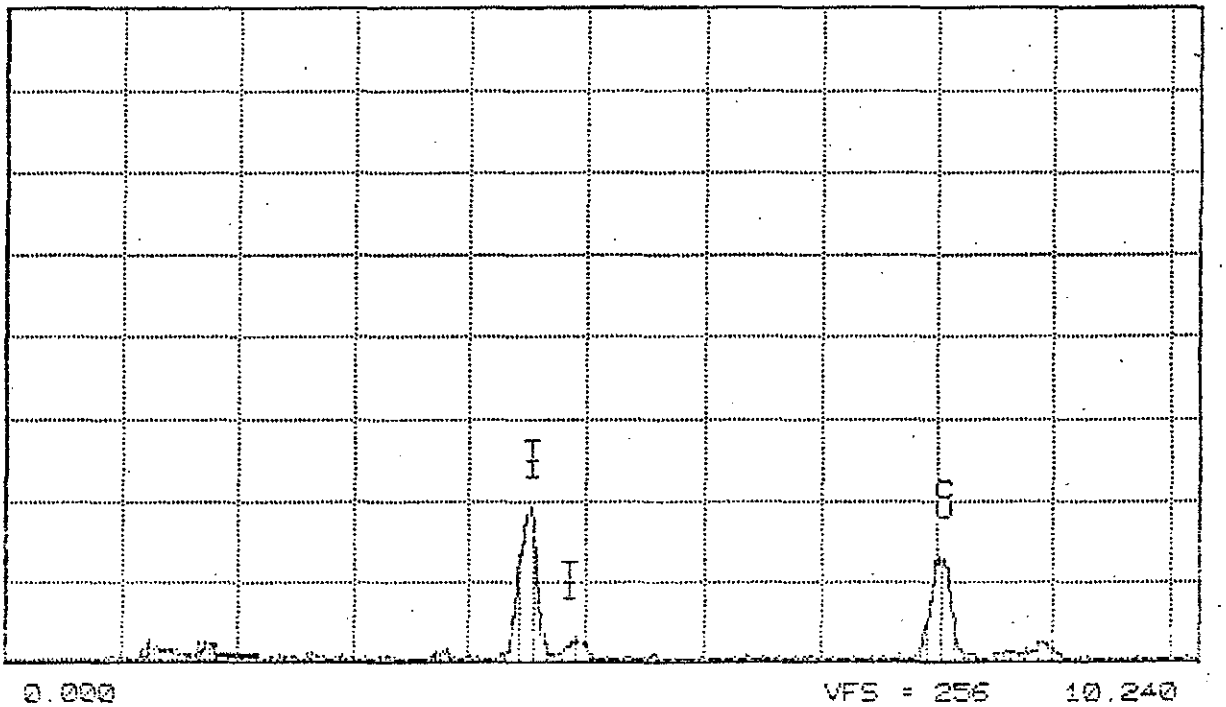


0.000 VFS = 256 10.240

6 M3177-10, GYPSUM

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:47

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=93

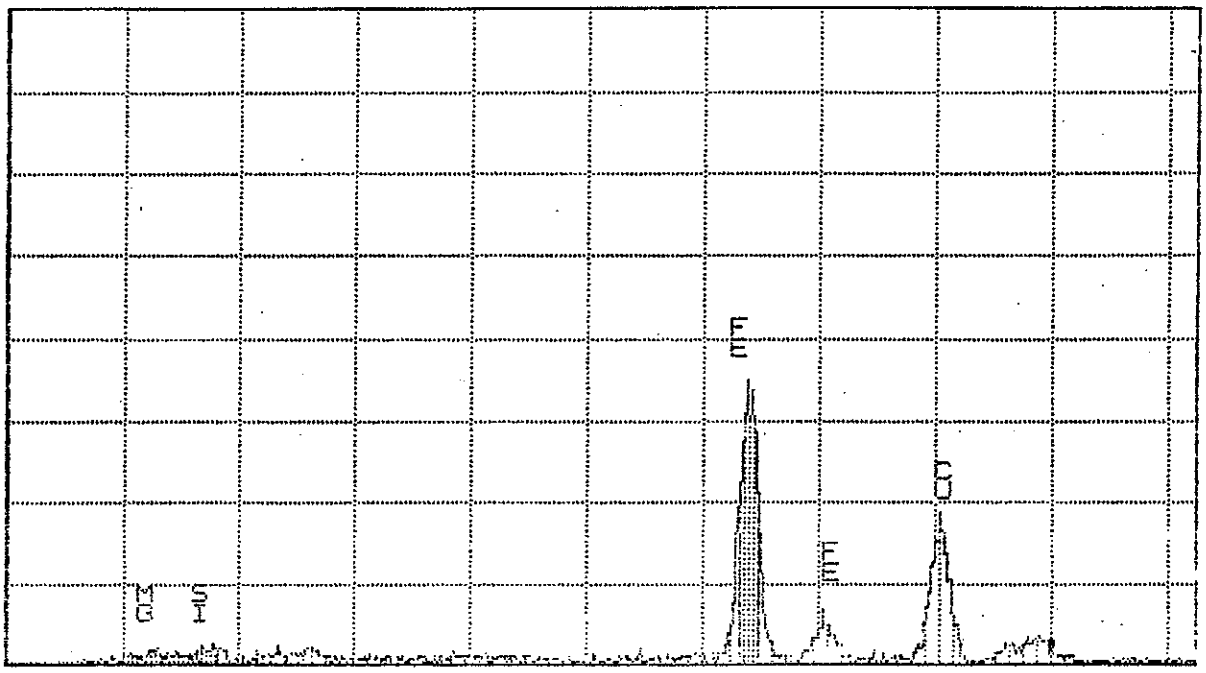


0.000 VFS = 256 10.240

S M3177-10, TIO2

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 15:57

Cursor: 0.000KeV = 0 ROI (SIKα) 1.660: 1.810=88



0.000 VFS = 256 10.240

7 M3177-10, IRON

MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

Sample # M3177-10 Analyst J.K.L.

Date 08/06/90

ACID DISSOLUTION

(1) Petri dish plus sample:	8.0988	g
(2) Petri dish minus sample:	7.3235	g
(3) Original sample weight:	0.7753	g
(4) Filter weight:	0.0630	g
(5) Clean petri dish weight:	7.3535	g
(6) Final sample weight plus filter and petri dish:	7.7461	g
(7) Final sample wt:((6) -[(4) + (5)])	0.3296	g
(8) Percent residue wt:((7)/(3) x 100)	42.5	%
(9) Amount in solution:(100 - (8))	57.5	%

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MATERIALS ANALYTICAL SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # 43177-10 Analyst W. B. Eyl

Date 8/9/90

1) Sample Analyzed before/after acid dissolutions

Starch observed

(no) ✓

yes _____

Iodine test
(ceiling tile only)

positive _____

negative _____

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MATERIALS ANALYTICAL SERVICES, INC.

BULK ASBESTOS SHEET

Project # - Spl #: M3177-11 Date: 3/6/90

Project Name: 1100 Main Analyst: Henderson

Sample Identification: 11B 8TH FLOOR

Gross Visual Description: tan matrix, gold & clear, wavy fibers, some white and red

Optical Data for Asbestos Identification

Morphology	wavy			
Pleochroism	NC			
Refractive Index	1.54/1.55			
Sign of Elongation	+			
Extinction	0			
Birefringence	low			
Melt				
Fiber Name	Ch.			

ASBESTOS MINERALS:	Est. Vol. %
Chrysotile	11
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	
Binders	54

Cement, gypsum

EFFERVESCENCE: weak

COMMENTS: NAD

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TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL 1100 NICAN 120.48
SAMPLE NUMBER: M3177-11
SAMPLE ID: #11B 8TH FLOOR

DATE OF ANALYSIS: 8/6/90

ANALYST: W. B. Eglund

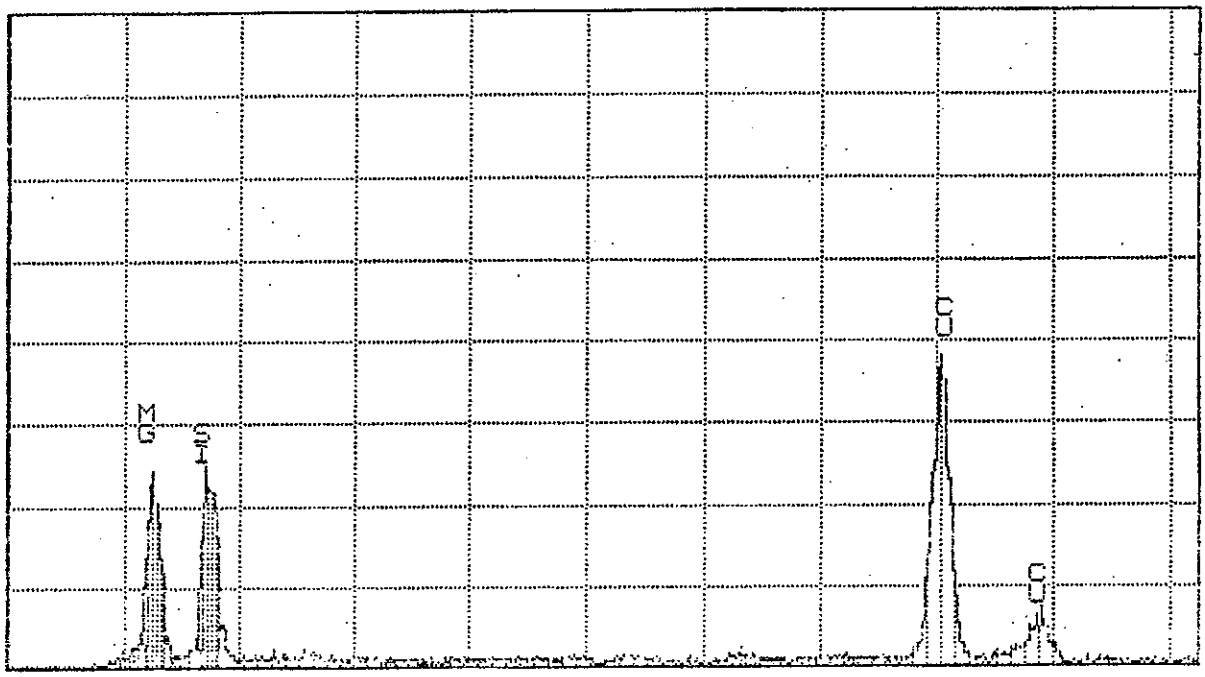
Asbestos Minerals: CHRYSOTICE (EDS)(DIFF)

Other Components: VERMICULITE (EDS)
GYPSUM (EDS)(DIFF)
CALCITE (EDS)(DIFF) * TRACE

Comments:

MATERIALS ANALYTICAL SERVICES MON 06-AUG-90 16:24

Cursor: 0.000keV = 0 ROI (SIKα) 1.660: 1.810=1010



0.000 VFS = 256 10.240

19 M3177-11, CHRYSOTILE